INDEX GUIDELINE

UBS US Large Cap Front End Put Underwriting Index

Version 1.0

28 May 2025

TABLE OF CONTENTS

INTRODUCTION

This document (the "GUIDELINE") is to be used as a guideline with regards to the composition, calculation and maintenance of the UBS US Large Cap Front End Put Underwriting 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 by UBS Bank plc (the "INDEX OWNER") The INDEX is 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

Category	Description
Asset Class	Equity
Strategy	The UBS US Large Cap Front End Put Underwriting Index (the "INDEX") reflects the performance of the portfolio of options (each a "Index Constituent" and together the "Index Components") described in this Annex. The level of the strategy (the "Index Level") is calculated on each Strategy Business Day in USD (the "Index Currency").
Regional Allocation	North America
Index Fee	0% p.a.

Table 1 Index Overview

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Index Currency	Type	BBG ticker	RIC
UBS US Large Cap Front End Put Underwriting Index	DE000SL0QW99	USD	Excess Return	UBSUUFPU Index	.UBSUUFPU

Each 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 using exchange prices. The INDEX OWNER has obtained the listed options available from REFINITIV and calculated the levels of the INDEX for the period of START DATE to LIVE DATE.

1.4. PRICES AND CALCULATION FREQUENCY

The level of the INDEX is calculated in respect of each CALCULATION DAY t and is published at 09:00 a.m. CET on the CALCULATION DAY immediately following CALCULATION DAY t.

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 the INDEX OWNER.

2. INDEX SELECTION

2.1. SELECTION OF INDEX COMPONENTS

On each CALCULATION DAY t that is a **REBALANCING DATE,** five (5) new exchange-listed options (each a "New Option") are selected and traded from Reference Option Contract , together form the "New Options" in respect of CALCULATION DAY t.

The parameters of the INDEX, and the characteristics of the traded New Option in respect of each of the Reference Option Contract, are defined below in: "*Table 2: Index Parameters*" and "*Table 3:Options' Characteristics*"

PARAMETER	GUIDELINES NOTATION	UJBRCSPX
UNDERLYING INDEX		SPX Index
VOLATILITY INDEX		VIX9D Index
LISTED OPTIONS		S&P 500 Weekly Options
OPTION EXECUTION TIME		On each REBALANCING DAY: 15:59 Eastern Time
MINIMUM CONTRACT SIZE		1 Contract
OVERNIGHT DISCOUNTING RATE		US Federal Funds Effective Rate (Bloomberg: FEDL01 Index)
CALENDAR DAY COUNT CONVENTION	CDCC	365
SCHEDULED TRADING DAY COUNT CONVENTION	STDCC	252
OPTION COST FLOOR %	%OCF	0.002%
OPTION COST FLOOR $	$OCF	0.05
VEGA RATIO MIN	VRM	0.2
VEGA RATIO SCALE1	VRS1	0.4
VEGA RATIO SCALE 2	VRS2	0.2

VEGA RATIO SCALE 3	VRS3	0.12
IV BARRIER 1	IVB1	20%
IV BARRIER 2	IVB2	30%
IV BARRIER 3	IVB3	50%
NET PREMIUM FLOOR	NPF	0.025

Table 2: Index Parameters

Option Contracts	GUIDELINES NOTATION	***Reference Option Contract 1***	***Reference Option Contract 2***
TRADE DATE	RD_i	EACH CALCULATION DAY t which is a REBALANCING DAY	
EXPIRATION DATE	ED^i	1 REBALANCING DAY	2 REBALANCING DAYS
TARGET DELTA	TD	-2.5%	
ALLOCATION	$Allocation_i$	$-\frac{2}{3}\times\frac{200\%}{5}$	$-\frac{1}{3}\times\frac{200\%}{5}$
TARGET STRIKE CAP	TSC	98.5%	
TARGET STRIKE FLOOR	TSF	70%	
OPTION TYPE	X_i	Put	

Table 3 : Option Contracts Characteristics

With:

$\boldsymbol{ED_t^i}$: for each i from 1 to 2, means the i-th **ELIGIBLE LISTED EXPIRATION DATE** falling after CALCULATION DAY t, provided that for the purposes of day counting any date that is not a REBALANCING DAY shall be excluded from the counting process.

2.1.1. Calculation of TARGET STRIKE

On each CALCULATION DAY t, for each i from (ranging from 1 to 2), the TARGET STRIKE $\boldsymbol{TS_t^i}$ corresponding to Reference Option Contract "i" is computed according to the following formula:

$$\boldsymbol{Taregt\ Strike_t^i = \max(\text{Strike Floor}_t, \min(\text{Strike Cap}_t, Uncapped\ Target\ Strike_t^i))}$$

Where:

$\mathbf{Strike\ Floor_t}$: is the **LISTED STRIKE** immediately greater than or equal to $\boldsymbol{UIT_t \times TSF}$. The Listed Strike universe is all the Listed Strikes as of the CALCULATION DAY "t-1" immediately preceding the CALCULATION DAY "t" in respect of the Intraday Observation Time.

$\mathbf{Strike\ Cap_t}$: is the **LISTED STRIKE** immediately lower than or equal to $\boldsymbol{UIT_t \times TSC}$. The Listed Strike universe is all the Listed Strikes as of the CALCULATION DAY "t-1" immediately preceding the CALCULATION DAY "t" in respect of the Intraday Observation Time.

$\boldsymbol{UIT_t}$: means the UNDERLYING INDEX TWAP on the CALCULATION DAY "t" in respect of the Intraday Observation Time.

$\boldsymbol{Uncapped\ Target\ Strike_t^i}$: is the Listed Strike that has the relevant absolute delta immediately greater than or equal to the absolute Target Delta ("TD"). The Listed Strike universe is all the Listed Strikes as of the CALCULATION DAY "t-1" immediately preceding the CALCULATION DAY "t" in respect of the Intraday Observation Time. The relevant delta for each Listed Strike is calculated using the spot as $\boldsymbol{UIT_t}$ and previous day's implied volatility adjusted by $\boldsymbol{VIXshift_t}$ which is defined as follow:

$$\boldsymbol{VIXshift_t = VIXT_t^{obs} - VIXT_{t-1}^{ref}}$$

With:

$\boldsymbol{VIXT_t^{obs}}$: means the VOLATILITY INDEX TWAP on CALCULATION DAY "t" in respect of the Intraday Observation Time.

$\boldsymbol{VIXT_{t-1}^{ref}}$: means the VOLATILITY INDEX TWAP on CALCULATION DAY "t-1" in respect of the Intraday Trade Ref Time.

2.1.2. Calculation of Option Strike

On CALCULATION DAY t that is a REBALANCING DAY, the five (5) New Options corresponding to each Reference Option Contract "i" (ranging from 1 to 2), shall have the respective Option Strike ("$\boldsymbol{K_{i,t}^n}$") from the following set:

$$\boldsymbol{\left\{K_{i,t}^{-2}, K_{i,t}^{-1}, K_{i,t}^{0}, K_{i,t}^{+1}, K_{i,t}^{+2}\right\}}$$

provided that if the absolute difference between any such Option Strike and $\boldsymbol{K_{i,t}^0}$ exceeds USD 20 or $\boldsymbol{K_{i,t}^*}$ cannot be determined on the relevant REBALANCING DAY, then such Option shall be excluded from the set of New Options.

Where:

$\boldsymbol{K_{i,t}^0}$: means the Listed Strike greater than or equal to $\boldsymbol{Taregt\ Strike_t^i}$ in respect of Listed Options for which the Option Snap Price is available in respect of the REBALANCING DAY immediately preceding CALCULATION DAY "t";

$\boldsymbol{Taregt\ Strike_t^i}$: means the Targe Strike corresponding to Reference Option Contract "i", in respect of such New Options on the CALCULATION DAY "t";

$\boldsymbol{K_{i,t}^{-n}}$: means the n^{th} Listed Strike lower than $\boldsymbol{K_{i,t}^{0}}$ (if available) in respect of Listed Options for which the Option Snap Price is available in respect of the REBALANCING DAY immediately preceding CALCULATION DAY "t"; and

$\boldsymbol{K_{i,t}^{+n}}$: means the n^{th} Listed Strike greater than $\boldsymbol{K_{i,t}^{0}}$ (if available) in respect of Listed Options for which the Option Snap Price is available in respect of the REBALANCING DAY immediately preceding CALCULATION DAY "t";

2.1.3. Calculation of Option Units

In respect of each CALCULATION DAY "t" that is a REBALANCING DAY, the Option Unit ("$\boldsymbol{OptUnits_{i,t}}$") in respect of each New Option on such REBALANCING DAY and in respect of each Reference Option Contract "i" is calculated as follows:

$$\boldsymbol{OptUnits_{i,t} = Allocation_i \times \frac{S_{t-1}}{UIT_t} \times \frac{5}{NOP_{i,t} \times STD(ED_t^i, t)}}$$

Where:

$\boldsymbol{Allocation_i}$: means the Allocation in respect of the Reference Option Contract "i" as defined in Table 3;

$\boldsymbol{S_{t-1}}$: means the Index Level in respect of the CALCULATION DAY "t-1" immediately preceding CALCULATION DAY "t";

$\boldsymbol{NOP_{i,t}}$: means in respect of the CALCULATION DAY "t", the number of New Options in respect of the Reference Option Contract "i";

$\boldsymbol{UIT_t}$: means the UNDERLYING INDEX TWAP on the CALCULATION DAY "t" in respect of the Intraday Observation Time.

$\boldsymbol{STD(a, b)}$: Function returns the number of CALCULATION DAYS from (but excluding) the date 'b' to (and including) the date "a". This function can return negative value if day 'b' occurs after date 'a'

2.2. SELECTION OF THE ELIGIBLE LISTED OPTIONS

2.2.1. Listed Options Mid-Prices

On any CALCULATION DAY t in respect of the Execution Time, the "MID PRICE" for any relevant Option is:

I. The average of the **BID PRICE** and the **ASK PRICE** as published by the corresponding exchange; Else
II. Else if the relevant **BID PRICE** in unavailable and the relevant **ASK PRICE** is less than or equal to 15 cents then the average of zero as a **BID PRICE** and **ASK PRICE** of the relevant Option as published by the corresponding exchange; Else
III. unavailable

This Section 2.2.1 is subject to the proviso that if, on any CALCULATION DAY *t*, the STRIKE PRICE of an OPTION comprised in the portfolio is not an **ELIGIBLE LISTED STRIKE**, such OPTION'S ASK PRICE, BID PRICE or MID PRICE (as appropriate) is computed according to Section 2.3

2.2.2. Filtering of Eligible Listed Options

On any CALCULATION DAY t that is also a REBALANCING DAY, a LISTED OPTION is an "ELIGIBLE LISTED OPTION" if (i) its **STRIKE PRICE** is an **ELIGIBLE LISTED STRIKE,** and (ii) its **EXPIRATION DATE** is an **ELIGIBLE LISTED EXPIRATION DATE,** as defined below:

1. A "**ELIGIBLE LISTED EXPIRATION DATE**" means an **EXPIRATION DATE** in respect of a LISTED OPTION which are SPX weekly options or SPX end-of-month options.
2. An "**ELIGIBLE LISTED STRIKE"** means a STRIKE PRICE in respect of a LISTED OPTION where the OPTION has a Listed **MID PRICE**.

2.3. INTRADAY DATA REFERENCES

This Section Error! Reference source not found. sets out the relevant time windows for the determination and calculation of time weighted average prices and snap prices with respect to OPTIONS, Underlying Index and VIX9D such prices comprising each of the **OPTION ASK PRICE, OPTION BID PRICE, OPTION MID PRICE, UNDERLYING INDEX TWAP, UNDERLYING INDEX SNAP LEVEL,** and **VOLATILITY INDEX TWAP.**

The tables below define the relevant Execution Time and the "Start Time" and "End Time" of the corresponding Intraday Observation Time and Intraday Trade Ref Time

All hours follow those of the New York Stock Exchange time zone (EST time).

Time Window	*Start Time*	*End Time*
Execution Time	15:59 (12:59 for Half Trading Days)	15:59 (12:59 for Half Trading Days)
Intraday Observation Time	15:41	15:45
Intraday Trade Ref Time	15:56 (12:56 for Half Trading Days)	16:00 (13:00 for Half Trading Days)

Table 4 : Intraday References

"**UNDERLYING INDEX TWAP**" and "**VOLATILITY INDEX TWAP**" are defined as the time weighted average prices on a given second s over a window of n seconds, calculated in accordance with the following formula:

$$TWAP_t^i = \frac{1}{m}\sum_{z=0}^{M-1} S_{z,i}(t)$$

Where:

- S(t) means, the Underlying Index Tick Level or the VIX9D Tick Level corresponding to the relevant time-stamp z on CALCULATION DAY t.
- M: means the total number of time-stamps (represented by 'z') in such window I.

3. REBALANCE

3.1. ORDINARY REBALANCE

No ordinary rebalance takes place.

3.2. EXTRAORDINARY REBALANCE

No extraordinary rebalance takes place.

4. CALCULATION OF THE INDEX

4.1. INDEX FORMULA

The "INDEX LEVEL" of the INDEX $Index_t$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$\boldsymbol{Index_t = 100}$$

- On each following CALCULATION DAY t:

$$\boldsymbol{Index_t = PortfolioMtM_t + Cash_t}$$

Where:

$Index_t$: means the INDEX LEVEL of the INDEX on CALCULATION DAY t

$PortfolioMtM_t$: means the PORTFOLIO MARK-TO-MARKET in respect of CALCULATION DAY t

$Cash_t$: means the CASH AMOUNT in respect of CALCULATION DAY t

4.1.1. Portfolio Mark-To-Market

In relation to CALCULATION DAY t, the PORTFOLIO MARK-TO-MARKET $PortfolioMtM_t$ is calculated in accordance with the following formula:

$$\boldsymbol{PortfolioMtM_t = \sum_{\substack{O \in COP_t \\ ED_O > t}} OptUnits_O \times OptionVal_{t,O}}$$

Where:

COP_t: each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t, as described in Section 4.1.2

$OptUnits_O$: the NUMBER OF UNITS in respect of OPTION O as defined in Section 2.1.3

$OptionVal_{t,O}$: means the OPTION VALUATION at the Execution Time, corresponding to OPTION O in respect of CALCULATION DAY "t", as determined in accordance with the provisions herein

ED_O : the EXPIRATION DATE of OPTION O as defined in Section 2.1.

4.1.2. Continuing Option Portfolio

In relation to CALCULATION DAY t, the CONTINUING OPTION PORTFOLIO COP_t is the set comprising of each OPTION O that satisfies the following criteria:

- TRADE DATE (RD_O) in respect of OPTION O falls on or prior to CALCULATION DAY t

- EXPIRATION DATE (ED_O) in respect of OPTION O falls after CALCULATION DAY t

4.1.3. Cash Amount

The CASH AMOUNT $Cash_t$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Cash_{t_0} = 100$$

- On each following CALCULATION DAY t:

$$Cash_t = Cash_{t-1} + PV_t + CV_t + EV_t - Index_{t-1} \times Fee \times \frac{ACT_{t-1,t}}{CDCC}$$

Where:

$Cash_{t-1}$: means the CASH AMOUNT in respect of CALCULATION DAY t-1

PV_t: the PREMIUM VALUE in respect of CALCULATION DAY t

CV_t: the COST VALUE in respect of CALCULATION DAY t

EV_t: the EXERCISE VALUES in respect of CALCULATION DAY t

$Index_{t-1}$: means the INDEX LEVEL of the INDEX on CALCULATION DAY t-1

$CDCC$: means the CALENDAR DAY COUNT CONVENTION as provided in Table 2: Index Parameters

Fee: means the INDEX FEE as provided in Table 1 Index Overview

$ACT_{t-1,t}$: the number of calendar days from, and including, CALCULATION DAY t-1 to, but excluding CALCULATION DAY t

4.1.4. Premium Value

In relation to CALCULATION DAY t, the PREMIUM VALUE PV_t is calculated in accordance with the following formula:

$$PV_t = \sum_{O \in COP_t \; AND \; RD_O = t} - OptUnits_O \times OptVal_{t,O}$$

Where:

COP_t : each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t, as described in Section 4.1.2.

$OptUnits_O$: the NUMBER OF UNITS in respect of OPTION O traded on TRADE DATE RD_O, as defined in Section 2.1.3

RD_O : the TRADE DATE of OPTION O as defined in Section 2.1.

$OptVal_{t,O}$: means the OPTION VALUATION corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time, as defined in Section 4.2.2

4.1.5. Cost Value

In relation to CALCULATION DAY t, the COST VALUE CV_t is calculated in accordance with the following formula:

$$CV_t = \sum_{O \in COP_t \ AND \ RD_O = t} - abs(OptUnits_O \times OptSpread_{t,O})$$

Where:

COP_t : each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t, as described in Section 4.1.2.

$OptUnits_O$: the NUMBER OF UNITS in respect of OPTION O traded on TRADE DATE RD_O, as defined in Section 2.1.3

RD_O : the TRADE DATE of OPTION O as defined in Section 2.1.

$OptSpread_{t,O}$: means the OPTION SPREAD corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time, as defined in Section 4.2.4

4.1.6. Exercise Values

In relation to CALCULATION DAY t, the EXERCISE VALUES EV_t is calculated in accordance with the following formula:

$$EV_t = \sum_{O \in COP_{t-1} \ AND \ ED_O = t} OptUnits_O \times OptPayoff_{t,O}$$

Where:

$OptUnits_O$: the NUMBER OF UNITS in respect of OPTION O traded on TRADE DATE RD_O, as defined in Section 2.1.3.

$OptPayoff_{t,O}$: the PAYOUT of OPTION O as of CALCULATION DAY t, as defined in Section 4.2.1.

4.2. OPTION PRICING METHODOLOGY

4.2.1. Option Payoff

In relation to OPTION O, the OPTION PAYOFF $Payoff_{t,O}$ is calculated in accordance with the following formula:

$$OptPayoff_{O,t} = max(0, CP \times (UI_t - K_O))$$

Where:

CP : whether the OPTION O is **OPTION TYPE** Call ($CP = 1$) or **OPTION TYPE** Put ($CP = -1$)

max: means the MAXIMUM FUNCTION

UI_t: the UNDERLYING INDEX CLOSING LEVEL as of CALCULATION DAY t

K_O : the STRIKE PRICE of OPTION O

4.2.2. Option Valuation

In relation to OPTION O, the OPTION VALUATION $OptionVal_{t,O}$ as of CALCULATION DAY t is calculated in accordance with the following formula:

$$\boldsymbol{OptVal_{t,O} = OptSnapPrice_{t,O} \times exp\left(ON_{t-1} \times DCF_{t,ED_O}\right)}$$

Where:

$OptSnapPrice_{t,O}$: means the OPTION SNAP PRICE corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time, as defined in Section 4.2.3

ON_{t-1} : the OVERNIGHT DISCOUNTING RATE as provided in Table 2: Index Parameters

$DCF_{t,ED}$: the DAY COUNT FRACTION in respect to EXPIRATION DATE ED as of CALCULATION DAY t as defined in Section 4.2.8.

4.2.3. Option Snap Price

In relation to OPTION O, the OPTION SNAP PRICE $OptSnapPrice_{t,O}$ as of CALCULATION DAY t means the OPTION MID PRICE as defined in Section 2.2.1, provided that if OPTION MID PRICE is unavailable or or OPTION O is selected on t and either of OPTION PRICE MONOTONICITY CONDITION or OPTION PRICE SPREAD CONDITION is not met, the OPTION SNAP PRICE is calculated in accordance with the following formula:

$$\boldsymbol{OptSnapPrice_{t,O} = PX\left(t, CP, Fwd_t, ED_O, K_O, \sigma_{t,K'_O,ED_O}\right)}$$

Where:

$PX\left(t, CP, Fwd_t, ED_O, K_O, \sigma_{t,K_O,ED_O}\right)$: is the BLACK SCHOLES PRICE of OPTION O of an **OPTION TYPE** CP, with a STRIKE PRICE K_O, an EXPIRATION DATE ED_O, an **IMPLIED VOLATILITY** σ_{t,K'_O,ED_O} and a FORWARD Fwd_t, which is calculated in accordance with the following formula:

$$\begin{aligned}\boldsymbol{PX\left(t, CP, Fwd_t, ED_O, K_O, \sigma_{t,K_O,ED_O}\right)} &\\ = \boldsymbol{CP} &\\ \times \left(\boldsymbol{Fwd_t \times N\left(CP \times d_{1,K_O,ED_O,t}\left(\sigma_{t,K_O,ED_O}\right)\right) - K_O \times N\left(CP \times d_{2,K_O,ED_O,t}\left(\sigma_{t,K_O,ED_O}\right)\right)}\right)&\end{aligned}$$

Where:

$$\boldsymbol{d_{1,K,ED,t}(\sigma) = \frac{\log\left(\frac{Fwd_t}{K}\right) + \frac{\sigma^2}{2} \times DCF_{t,ED}}{\sigma \times \sqrt{DCF_{t,ED}}}}$$

and

$$\boldsymbol{d_{2,K,ED,t}(\sigma) = d_{1,K,ED,t}(\sigma) - \sigma \times \sqrt{DCF_{t,ED}}}$$

With:

Fwd_t: the FORWARD in relation to CALCULATION DAY t as defined in Section 4.2.9

σ_{t,K'_O,TE_O}: means the **IMPLIED VOLATILITY** σ as of CALCULATION DAY t in respect of LISTED OPTION with the corresponding EXPIRATION DATE ED_O and **OPTION TYPE** CP the same as that of OPTION O and the STRIKE PRICE K'_O a which is immediately higher LISTED STRIKE than K_O in respect of which OPTION PRICE MONOTONICITY CONDITION or OPTION PRICE SPREAD CONDITION are met;

$DCF_{t,ED}$: the DAY COUNT FRACTION in respect to EXPIRATION DATE ED as of CALCULATION DAY t as defined in Section 4.2.8.

K_O : the STRIKE PRICE of OPTION O

ED_O: the EXPIRATION DATE of OPTION O

$N(x)$: CUMULATIVE DISTRIBUTION FUNCTION of the Standard Normal Distribution, being a value computed according to the following formula:

$$\boldsymbol{N(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{-\frac{u^2}{2}} du}$$

$\log(.)$: The NATURAL LOGARITHM FUNCTION

4.2.4. Option Spread

In relation to OPTION O, the OPTION SPREAD $OptSpread_{t,O}$ in respect of CALCULATION DAY "t" and the Execution Time is calculated in accordance with the following:

If $OptCalcSpread_{t,O} > \left(OptVal_{t,O} - OptBid_{t,O}\right) \times \mathbf{0.5}$, then:

$$\boldsymbol{OptSpread_{t,O} = OptCalcSpread_{t,O}}$$

Otherwise:

$$\boldsymbol{OptSpread_{t,O} = OptVal_{t,O} - OptBid_{t,O}}$$

With:

$OptVal_{t,O}$: means the OPTION VALUATION corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time, as defined in Section 4.2.2

$OptBid_{t,O}$: means the OPTION BID corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time, which is the **BID PRICE** as defined in Section 2.2.1

$OptCalcSpread_{t,O}$: means the SPREAD corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time and is calculated in accordance as defined in Section 4.2.7

4.2.5. Eligible Listed Option Implied Volatility

The ELIGIBLE LISTED OPTION IMPLIED VOLATILITY in relation to an ELIGIBLE LISTED OPTION O with STRIKE PRICE K and EXPIRATION DATE TE on any CALCULATION DAY t is calculated as the **IMPLIED VOLATILITY** σ for which the BLACK SCHOLES PRICE for such OPTION matches the OPTION MID PRICE of the ELIGIBLE LISTED OPTION:

$$\boldsymbol{Price_{t,O}^{ED,K} = PX_{t,O} = PX(t, CP, Fwd_t, K, ED, \sigma)}$$

With:

$$\boldsymbol{CP = \begin{cases} Put\ Option, if\ K < Fwd_t \\ Call\ Option, if\ K \geq Fwd_t \end{cases}}$$

With:

$Price_{t,O}^{ED,K}$: is the OPTION MID PRICE in respect of CALCULATION DAY t of the ELIGIBLE LISTED OPTION O expiring on EXPIRATION DATE ED with a STRIKE PRICE K

$PX_{t,O}$: The BLACK SCHOLES PRICE of OPTION O as of CALCULATION DAY t as determined in accordance with Section 4.2.3.

CP: The OPTION TYPE of ELIGIBLE LISTED OPTION O expiring on EXPIRATION DATE ED with a STRIKE PRICE K

Fwd_t: the FORWARD in relation to CALCULATION DAY t as defined in Section 4.2.9

4.2.6. Option Greeks Calculation

The DELTA and VEGA of any OPTION O are computed in accordance with the following formulas:

The DELTA $Delta_{t,O}$ of OPTION O as of CALCULATION DAY t is calculated as follows:

$$\boldsymbol{Delta_{t,O} = Delta\left(t, CP, Fwd_{t,ED_O}, ED_O, K_O, \sigma_{t,K_O,ED_O}\right) = CP \times N\left(CP \times d_{1,O,t}\left(\sigma_{t,K,ED_O}\right)\right)}$$

The VEGA $Vega_{t,O}$ of OPTION O as of CALCULATION DAY t is calculated as follows:

$$\boldsymbol{Vega_{t,O} = Vega\left(t, CP, Fwd_t, ED_O, K_O, \sigma_{t,K_O,ED_O}\right) = Fwd_t \times N'\left(d_{1,O,t}\left(\sigma_{t,K_O,ED_O}\right)\right) \times \sqrt{DCF_{t,ED_O}}}$$

Where:

$$\boldsymbol{d_{1,O,t}(K) = \frac{\log\left(\frac{Fwd_t}{K}\right) + \frac{\sigma_{t,K,ED_O}{}^2}{2} \times DCF_{t,ED_O}}{\sigma_{t,K,ED_O} \times \sqrt{DCF_{t,ED_O}}}}$$

With:

CP : whether the OPTION O is **OPTION TYPE** Call ($CP = 1$) or **OPTION TYPE** Put ($CP = -1$)

Fwd_t: the FORWARD in relation to CALCULATION DAY t as defined in Section 4.2.9

K: The STRIKE PRICE of OPTION O

DCF_{t,ED_O}: The DAY COUNT FRACTION in respect to EXPIRATION DATE ED_O of OPTION O as of CALCULATION DAY t as defined in Section 4.2.8.

$N(x)$: CUMULATIVE DISTRIBUTION FUNCTION of the Standard Normal Distribution as defined in Section 4.2.3

$\log(.)$: The NATURAL LOGARITHM FUNCTION

σ_{t,K,ED_O}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K as of EXPIRATION DATE ED_O of OPTION O

$\mathrm{N}'(x)$: the density function of the Standard Normal Distribution, being a value computed according to the following formula:

$$N'(x) = \frac{e^{-\frac{x^2}{2}}}{\sqrt{2\pi}}$$

$\exp(.)$: EXPONENTIAL FUNCTION to the Basis of Euler's number e.

4.2.7. Spread

In relation to OPTION O, the SPREAD $OptCalcSpread_{t,O}$ in respect of CALCULATION DAY t and the Execution Time is calculated in accordance with the following:

$$\boldsymbol{OptCalcSpread_{t,O} = Spread\left(t, \sigma_{t,K_O,ED_O}, Vega_{t,O}, Fwd_t, OptVal_{t,O}\right)}$$

With:

$$\begin{aligned}\boldsymbol{Spread}&\left(t, \sigma_{t,K_O,ED_O}, Vega_{t,O}, Fwd_t, OptVal_{t,O}\right)\\ &= Fwd_t\\ &\times max\left[min\left(\frac{OptVal_{t,O} - NPF}{Fwd_t}, max\left(\%OCF, \frac{\$OCF}{Fwd_t}\right)\right), \left(VRM\right.\right.\\ &+ \frac{max\left(0, min(\sigma - IVB1, IVB2 - IVB1)\right)}{VRS1}\\ &+ \frac{max\left(0, min(\sigma - IVB2, IVB3 - IVB2)\right)}{VRS2} + \left.\left.\frac{max\left(0, \sigma_{t,K_O,ED_O} - IVB3\right)}{VRS3}\right)\right.\\ &\times \left.\frac{Vega_{t,O}}{100 \times Fwd_t}\right]\end{aligned}$$

Where:

Fwd_t: the FORWARD in relation to CALCULATION DAY t as defined in Section 4.2.9

$Vega_{t,O}$ the VEGA of OPTION O as of CALCULATION DAY t as defined in Section 4.2.6

σ_{t,K,ED_O}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K as of EXPIRATION DATE ED_O of OPTION O

$OptVal_{t,O}$: means the OPTION VALUATION corresponding to OPTION O in respect of CALCULATION DAY "t" and the Execution Time, as defined in Section 4.2.2

And $NPF, VRM, IVB1, IVB2, IVB3, VRS1, VRS2, VRS3, \%OCF$ and $\$OCF$ are as provided in Table 2: Index Parameters and Table 3 : Option Contracts Characteristics

4.2.8. Day Count Fraction

The DAY COUNT FRACTION in respect of EXPIRATION DATE ED as of CALCULATION DAY t is:

(i) the number of CALCULATION DAYS from (and including) CALCULATION DAY t to (but excluding) EXPIRATION DATE ED; *divided by*

(ii) SCHEDULED TRADING DAY COUNT CONVENTION $STDCC$ as provided in Table 2

4.2.9. Forward

In relation to CALCULATION DAY t, the FORWARD Fwd_t is defined in accordance with the following formula:

$$Fwd_t = UISnap_t$$

With:

$UISnap_t$: means the UNDERLYING INDEX TWAP on the CALCULATION DAY "t" in respect of the Execution Time.

4.3. ACCURACY

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

4.4. RECALCULATION

The INDEX ADMINISTRATOR makes the greatest possible efforts to accurately calculate and maintain the INDEX. However, errors in the determination process may occur from time to time for a variety of reasons (internal or external) and therefore cannot be completely ruled out in respect of any INDEX. The INDEX ADMINISTRATOR 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 generally depend 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/.

4.5. MARKET DISRUPTION

In periods of market stress the INDEX ADMINISTRATOR shall calculate the INDEX 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.

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 by the INDEX ADMINISTRATOR.

5.2. METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. If 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 or 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 "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

The INDEX ADMINISTRATOR makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, the INDEX ADMINISTRATOR shall follow a clearly defined and transparent procedure to adapt INDEX methodologies to account for 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.

The INDEX ADMINISTRATOR 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. INDEX COMMITTEE

An index committee composed of staff from the INDEX ADMINISTRATOR 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/.

6. DEFINITIONS

"ASK PRICE" in relation to a CALCULATION DAY t and **ELIGIBLE LISTED OPTION**, shall mean the LISTED ASK PRICE in accordance with Section 2.2.1

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

"BID PRICE in relation to a CALCULATION DAY t and OPTION O, shall mean (i) the LISTED BID PRICE, if the OPTION O is an **ELIGIBLE LISTED OPTION** calculated; or (ii) otherwise, the price estimated in accordance with Section 2.2.1

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

"CALCULATION DAY" means a weekday on which each of NYSE are open for business.

"CASH AMOUNT" shall have the meaning as defined in Section 4.1.3.

"CUMULATIVE DISTRIBUTION FUNCTION" defines the standard normal distribution.

"CONTINUING OPTION PORTFOLIO" has the meaning given to it in Section 4.1.2.

"DAY COUNT FRACTION" has the meaning given to it in Section 4.2.8

"DELTA" shall have the meaning given to it in Section 4.2.6

"ELIGIBLE LISTED EXPIRATION DATE" shall have the meaning given to it in Section 2.2.2

"ELIGIBLE LISTED OPTION" has the meaning given to it in Section 2.22.2.2

"ELIGIBLE LISTED STRIKE" has the meaning given to it in Section 2.2.2

"EXCHANGE" means any of the New York Stock Exchange ("NYSE") or the Chicago Board Options Exchange ("CBOE").

"EXPIRATION DATE" is defined in relation to an OPTION, FUTURE CONTRACT or FORWARD and is the date on which such instrument expires.

"EXPONENTIAL FUNCTION" means the exponential function to the basis of Euler's Number e.

"FORWARD" has the meaning given to it in Section 4.2.9

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

"HALF TRADING DAY" means a CALCULATION DAY on which an early market close is announced by the relevant Exchange.

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

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

"INDEX COMMITTEE" shall have the meaning as defined in Section 5.5

"INDEX COMPONENTS" means, with respect to the **INDEX** and a Calculation Day, all the **OPTIONS** in the CONTINUING OPTION PORTFOLIO on such day.

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

"IMPLIED VOLATILITY" has the meaning given to it in Section 4.2.5

"LISTED OPTION" means an OPTION that is listed on an **EXCHANGE**.

"LIVE DATE" means May 22, 2025

"MAXIMUM FUNCTION" means, when followed by a series of amounts inside brackets, whichever is the larger of the amounts separated by a comma inside those brackets.

"MINIMUM FUNCTION" means, when followed by a series of amounts inside brackets, whichever is the smallest of the amounts separated by a comma inside those brackets.

"MID-PRICE" in relation to a CALCULATION DAY t and OPTION O, shall mean (i) the LISTED MID PRICE, if the OPTION O is an **ELIGIBLE LISTED OPTION** calculated; or (ii) otherwise, the price estimated in accordance with Section 2.2.1

"NATURAL LOGARITHM FUNCTION" is the inverse of the EXPONENTIAL FUNCTION.

"NUMBER OF UNITS" is defined in relation to an OPTION and is the quantity or number of **OPTIONS**.

"OPTION" means a derivative that securitizes the right but not the obligation to buy (being **OPTION TYPE** Call or a "CALL OPTION") or sell (being **OPTION TYPE** Put or a "PUT OPTION") a pre-defined reference instrument relating to a position in respect of the UNDERLYING ASSET, on a pre-defined day (being EXPIRATION DATE ED), for a pre-defined price (being STRIKE PRICE K).

"OPTION TYPE" shall mean the type of OPTION O, which can be either "Call" or "Put".

"OPTION PRICE MONOTONICITY" mean in respect of any OPTION O, on a CALCULATION DAY which is the **TRADE DATE** of the relevant OPTION O, if the relevant Option **MID-PRICE** is less than or equal to each of the five (5) subsequent Options with listed **STRIKE PRICE** higher that the relevant OPTION O, then the **OPTION PRICE MONOTONICITY** is said to be met

"OPTION PRICE SPREAD" mean in respect of any OPTION O, on a CALCULATION DAY, if the absolute difference between the corresponding Option **BID PRICE** and **ASK PRICE** is lower than **MID-PRICE**, then the **OPTION PRICE SPREAD** is said to be met

"PAYOFF" has the meaning given to it in Section 4.2.1.

"PORTFOLIO MARK-TO-MARKET" has the meaning given to it in Section 4.1.1.

"PREMIUM PAID" has the meaning given to it in Section 4.1.4.

"REFINITIV" is a data provider being a subsidiary of London Stock Exchange.

"REBALANCING DAY" means any CALCULATION DAY which is not a HALF TRADING DAY or any CALCULATION DAY on which trading on the EXCHANGE is scheduled to close prior to its regular closing time.

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

"START DATE" means January 2, 2024.

"STRIKE PRICE" is defined in relation to an OPTION and is the strike price specified in respect of such OPTION.

"TRADE DATE" means, in relation to an OPTION O, the CALCULATION DAY t on which the position in respect of such OPTION is notionally traded.

"USD" means United States Dollars.

"VEGA" has the meaning given to it in Section 4.2.6

7. VERSIONING

VERSION	DATE	DESCRIPTION
1.0	May 28th, 2025	Initial Guideline creation (*initial version*)

Table 5 Versioning

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