



**BITA**

**Index  
Methodology  
Guidebook**

**Melanion Bitcoin  
Exposure Index**

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[www.bitadata.com](http://www.bitadata.com)

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# Log of Amendments

**1) 08.03.2021** - v1.0. First publication of methodology guide



# Introduction and Background

## ABOUT THE INDEX

The **Melanion Bitcoin Exposure Index** captures the net total return performance of a selection of companies, listed at recognized North American and European exchanges, exhibiting the highest correlation and revenue exposure to Bitcoin. The index constituents are weighted according to the Beta coefficient against Bitcoin, capped based on liquidity, and rebalanced and reconstituted on a quarterly basis. Index values are disseminated on an intraday and end-of-day basis.

## ABOUT BITA

BITA is a Germany-based Fintech that provides enterprise-grade indexes, data and infrastructure to institutions operating in the passive and quantitative investment spaces. Thanks to its innovative index software, designed to outperform other existing solutions in terms of flexibility and speed, BITA can provide independent, methodologically-sound indexes that are both investable and replicable by customers and stakeholders. BITA's methodologies and processes are completely transparent and available publicly.

## ABOUT THIS DOCUMENT

This document is published to serve as a guidebook of the methodologies adopted in the construction, calculation and management of the index.

Any methodological changes or alterations to this document are performed by the BITA Index Management Board (BIMB) and authorized by the BITA Oversight Function, following the directives of both the "BITA Index Methodology Policy" and the Regulation (EU) 2016/2011 "Benchmark Regulation" (BMR). The index is calculated, administered, and disseminated by BITA GmbH, and the index sponsor is Melanion Capital.

# Index Characteristics and Specifications

## 1. GENERAL INFORMATION AND INDEX OBJECTIVES

The **Melanion Bitcoin Exposure Index** captures the Net Total Return performance of a selection of companies, listed at recognized North American and European exchanges, exhibiting the highest correlation and revenue exposure to Bitcoin.

- **Inception Date:** 15.04.2021
- **Index value at inception:** 1.000
- **Return calculation:** Net Total Return
- **Weighting mechanism:** Smart beta (w.r.t. Bitcoin), with liquidity adjustment
- **Rebalancing frequency:** Quarterly
- **Reconstitution:** Quarterly
- **Number of Constituents:** Maximum 30

The base currency of the index is USD. Index values may also be published in other currencies when applicable.

## 2. SHORT NAME AND IDENTIFIERS

The index is distributed under the following identifiers:

NAME	TYPE	FIGI CODE	BLOOMBERG
Melanion Bitcoin Exposure Index	Net Total Return	BBG00ZN800V4	MBCEXI

## 3. EU BENCHMARKS REGULATION CONSIDERATIONS AND STATEMENT

BITA GmbH is the benchmark “administrator” of the **Melanion Bitcoin Exposure Index**, the “Benchmark” or “Index”.

The Index is calculated based on readily available data and does not use any contributed input data (as defined in Article 3(1)(8) of the BMR). The Index is classified as a non-significant benchmark (as defined in Article 3(1)(27) of the BMR).

The Index does not pursue Environmental, Social, and Governance (ESG) objectives and does not take into account ESG factors. The Index is not classified as EU Climate Transition Benchmark (as defined in Article 3(1) (23a) of the BMR) or EU Paris-aligned Benchmark (as defined in article 3(1) (23b) of the BMR).

For the complete Benchmark Statement on the Melanion Bitcoin Exposure Index, please refer to the [“BITA Governance Policies”](#).

(a) The term administrator is used in this document in the same sense as it is defined in Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the “Benchmarks Regulation” or “BMR”).



This Methodology guide should be read in conjunction with the Melanion Bitcoin Exposure Index Benchmark Statement and other associated BITA Governance policies and methodology documents. Those documents are highlighted whenever referenced in this Methodology guide. They are also available on the BITA website (<https://www.bitadata.com/governance.html>).

## 4. INPUT DATA

In line to the input data requirements under the Article 11 of the Regulation (EU) No 596/2014 (the “Benchmarks Regulation” or “BMR”), the **Melanion Bitcoin Exposure Index** does not use contributions of input data, which may be prone to contributor discretion. A contribution of input data is defined as such data not readily available to an administrator or to another person for the purposes of passing to an administrator that is required in connection with the determination of a benchmark, and is provided for that purpose. See Article 3(1)(8) of the EU Regulation 2016/1011 of the European Parliament and of the Council of 8 June 2016.

At each calculation point, the index value is calculated based on the constituents’ individual quotes on the respective regulated exchanges. The constituents’ most recent prices are used. When the constituents are quoted in a different currency, quotes are translated using the most recent spot FX rates. The daily index closing value is calculated using the spot FX rates as of the 16.00 hrs London (UTC + 01:00) WM fixing quoted by Reuters. If no 16:00 London WM Fixing is available, an alternative 16:00 London spot rate will be used.

For more detailed information on specific guidelines regarding the types of Input data, the procedures for the control of input data and the exercise of expert judgement please refer to the [“BITA Input Data Policy”](#).

## 5. INDEX CALCULATION AND DISSEMINATION FREQUENCY

### 5.1. Calculation Methodology

The index is based on the Laspeyres formula, which links each successive weighted basket of securities in the index with the preceding basket. This translates into a unique index “Divisor” for each index, which is adjusted to maintain the continuity of the index’s values across changes due to corporate actions.

### 5.2. Calculation Frequency

The official index closing level is calculated once a day, every Business Day (EoD calculation). In addition to the official close calculation, index levels are calculated intraday with a 15-seconds resolution during the index dissemination period. Historical “EoD” index data is available as backtested data starting on the index backtesting date, and as calculated and maintained data starting on the index inception date.

### 5.3. Index Dissemination

The Intraday Calculation and Dissemination of the Index occurs every Business Day between 9:00 and 22:30hrs CET. Official index EOD levels are calculated and disseminated after the close of all exchanges on which the index constituents are listed (EoD calculation). A day is considered to be a Business Day if at least one of the exchanges considered in the Index is open for trading.

The index is distributed via BITA’s direct dissemination channels and a variety of data vendors when applicable.

# Composition of the Index

## 1. INVESTABLE INDEX UNIVERSE

### 1.1. Selection of Index Constituents

The initial composition of the index includes companies that satisfy the following criteria:

1. Companies listed at recognized North American and European exchanges, exhibiting the highest correlation and revenue exposure to Bitcoin.
2. The companies that operate in segments of Crypto Asset Management and Trading, Crypto Banking and Services, Crypto Mining (including Hardware), and Blockchain Technology, or the companies that hold Cryptocurrency on their balance sheet as investments or for preservation of value.
3. Minimum Average Daily Traded Value (ADTV) in the last month of USD 500,000  
In the case when, at a rebalancing event, due to the liquidity filter, it is not possible to maintain an eligible universe of more than 30 constituents, the liquidity threshold will be reduced to a value of USD 100,000 to ensure the viability of the index.
4. Minimum Market Capitalization: USD 100 million
5. Trades at a recognised exchange in North America and Europe with strict listing requirements and policies.

### 1.2. Security Considerations

If a company has more than one share class that qualifies for membership in the index on a stand-alone security basis, only the share class with the highest liquidity as measured by ADTV of the last month will be considered for composition.

IPOs are reviewed for addition at a regular reconstitution on the basis of the eligibility criteria, and availability of the sufficient data for beta-score calculation with respect to Bitcoin (minimum of 3 months).

Eligible ADRs are admitted in the Index.

## 2. INDEX REVIEW SCHEDULE

### 2.1. Ordinary Adjustments

The Index is reconstituted and rebalanced quarterly at the Close Of Business (COB) on the 3rd Friday of March, June, September and December after market close.

The **Determination date** for ordinary adjustments occurs at the COB on the 1st Friday of the rebalancing / reconstitution month.



BITA provides constituent pro-forma files each time the Index rebalances. Pro-forma files are normally released on a daily basis, starting after the market close on the Determination Date.

On each Determination date, the eligible companies from the universe are ranked by their Beta coefficient with respect to the Bitcoin (defined in the Index Calculation chapter below), calculated using the official market close prices of the securities and Bitcoin, and up to the top 30 enter the index. Only constituents with positive betas are considered for index composition. In case of ambiguities for the companies eligible for the 30th place with equal Beta coefficients, a company with a higher liquidity (i.e. higher ADTV) is ranked higher to enter the index.

**Exit buffer:** None

**Fast entry/exit mechanisms:** None

**IPO entry mechanism:** Securities are added as long as they are eligible for the following scheduled reconstitution. If a company is traded for less than 3 months before the upcoming reconstitution, it will be added in the reconstitution following the upcoming one, i.e. scheduled one quarter further out.

**Deletion Replacement rules:** Deleted securities are replaced at Next Reconstitution.

## **2.2. Extraordinary Adjustments**

BIMB may decide to substitute an index constituent with a candidate index constituent upon the occurrence of an extraordinary event as deemed by BIMB or according to the “BITA Corporate Actions Treatment Guide”. The successor index constituent shall be included in the index after the close of business day when an extraordinary event has been determined.

# Index Calculation

## 1. INDEX FORMULA

The index value is calculated every 1 second with the updated price from its constituents using the following formula:

$$Index_t = \sum_i^n \frac{P_{i,t} * IWF_{i,t} * TOS_{i,t} * AWF_{i,t} * F_{i,t}}{D_t}$$

Where:

**P<sub>i,t</sub>**= Price of the constituent 'i' at time t

**IWF<sub>i,t</sub>**= Investable Weighting Factor of constituent "i" at time "t"

**TOS<sub>i,t</sub>**= Total no. of Shares Outstanding of constituent "i" at time "t"

**AWF<sub>i,t</sub>**= Adjustable Weighting Factor for constituent "i" at time "t"

**F<sub>i,t</sub>**= Foreign exchange Rate for constituent "i" at time "t"

**D<sub>t</sub>**= Divisor Value at time "t"

The initial divisor value is calculated according to the following formula:

$$D_t = \sum_i^n \frac{P_{i,t} * IWF_{i,t} * TOS_{i,t} * AWF_{i,t} * F_{i,t}}{Initial\ Index\ Value}$$

On each **Adjustment Day** t, the divisor is adjusted to keep the index value constant. The new divisor is calculated as:

$$D_{t+1} = D_t + \frac{Change\ in\ Market\ Cap\ of\ the\ Index}{Index\ Value_t}$$

The new divisor is then used in the calculation of the following day's index open.

## 2. INDEX WEIGHTING

On the Determination Day, the selected N = 30 companies are initially weighted by their beta-scores (a composite measure of correlation between the company and Bitcoin) as follows:

$$W_i = \frac{B_i}{\sum_i^N B_i}$$

Where:

**W<sub>i</sub>** is the initial beta-score weight of the i-th constituent;

**B<sub>i</sub>** is the beta-score for the i-th constituent constructed as an average of the regression beta coefficients with respect to Bitcoin (BTCUSD) calculated for periods of 13, 26, 52, 78, and 104 weeks back (only the ones that are available given the sufficient historical price data of at least 13 weeks):

$$B_i = \frac{1}{\text{count}(\forall \exists \beta_i(\cdot))} \sum_t \beta_i(t), t \in \{13w, 26w, 52w, 78w, 104w\}.$$

For each constituent Beta coefficients are calculated as the covariance between the constituent weekly returns and the bitcoin weekly returns divided by the variance of the bitcoin weekly returns. Only constituents with positive betas are considered for index composition.

### 3. INDEX CAPPING

Once the initial constituent weights are set as in the previous section, each constituent weight is further iteratively reviewed and adjusted (if required) according to the following combined methodology.

#### 3.1. Liquidity-based Adjustments

The initial beta-score weights are adjusted by the liquidity criteria to limit the impact of a single day trading to 25% of value traded for any constituent given a theoretical \$25M inflow.

The liquidity-adjusted weights are iteratively calculated as follows:

i) Liquidity thresholds are set:

- a. 90 day Average Daily Value Traded (ADV\$<sub>i</sub>) for the i-th constituent is calculated based on daily closing price and number of shares traded
- b. The ADTV threshold (ADTVTH) for the Percentage of 90 day Average Daily Value Traded (ADV%<sub>i</sub> for the i-th constituent) is set to 25%
- c. Investment threshold ITH is set to \$25 million
- d. Liquidity threshold weight for the i-th constituent is calculated based on the investment threshold ITH and ADTVTH as follows:

$$W'_i = \frac{ADTVTH \times ADV\$_i}{ITH}$$

ii) The ADV%<sub>i</sub> for the i-th constituent is determined given the investment threshold ITH and the calculated weight of the constituent using the following equation:

$$ADV\%_i = \left( \frac{W_i \times ITH}{ADV\$_i} \right)$$

Where:

**W<sub>i</sub>** is the calculated weight of the i-th constituent

**ADV%<sub>i</sub>** = Percentage of 90 day Average Daily Value Traded for the i-th constituent

**ADV\$<sub>i</sub>** = 90 day Average Daily Value Traded for the i-th constituent

iii) If the constituent ADV%<sub>i</sub> is less than the ADTVTH, then that weight does not need to be adjusted until step (iv.b) below. If none of the constituents has ADV%<sub>i</sub> greater than the ADTVTH, then none of the weights need to be adjusted for liquidity threshold which concludes this part of the weighting process (skip to step (v)).

**iv)** If the  $ADV\%_i$  for one or more constituents is greater than the  $ADTVTH$ , then the threshold weight  $W_i$  is assigned to each of them respectively, such that the  $ADV\%_i$  is equal to the  $ADTVTH$  for each such constituent:  $W_i = W'_i$ . The excess weights are redistributed among the remaining constituents which have  $ADV\%_i < ADTVTH$  in the following steps:

**a.** The aggregate difference between the initial and adjusted weights of those constituents where the  $ADV\%_i$  is greater than the  $ADTVTH$  is distributed on a pro-rata basis among stocks where the  $ADV\%_i$  is less than the  $ADTVTH$ , using the following equation:

$$W_{adj,i} = \frac{W_i |_{ADV\%_i > ADTVTH}}{\sum_{j | ADV\%_j < ADTVTH} W_j} \times \sum_{k | ADV\%_k > ADTVTH} (W_k - W'_k)$$

Where:

**$W_{adj,i}$**  is the pro-rata adjustment for the index weight of the i-th constituent where the  $ADV\%_i$  is less than the  $ADTV$  Threshold  $ADTVTH$ ;

**$W'_i$**  is the liquidity weight threshold defined in Step (i.d) above.

The summation limits indicate what constituents weights are in scope in each case: those with  $ADV\%_i$  greater or lower than the  $ADTV$  Threshold  $ADTVTH$ .

**b.** The weight of constituents with a  $ADV\%_i$  lower than the  $ADTV$  Threshold are adjusted as follows:

$$W''_i = W_i + W_{adj,i}$$

Where:

**$W_i$**  is the weight of the i-th constituent which has  $ADV\%_i$  lower than the  $ADTV$  Threshold

**$W''_i$**  is the modified weight of each constituent where  $ADV\%_i$  is lower than the  $ADTV$  Threshold

**$W_{adj}$**  is the adjustment for index weight of the i-th constituent where the  $ADV\%_i$  is lower than the  $ADTV$  Threshold

**v)** Finally, the value of the capped weight  $W_i$  is reassigned to value of the  $W''_i$ :  $W_i = W''_i$ . The Steps (ii) through (iv) are repeated iteratively until all constituents' Percentage of Average Daily Value Traded is less than or equal to the  $ADTV$  Threshold.

### **3.2. Regulatory Capping**

To avoid undue concentration, each individual Index Constituent should not represent more than 10% of the total index. This capping constraint is applied to index weights on each Determination Date through an iterative process, where any weights in excess of 10% are redistributed proportionally among the remaining securities pro-rated, repeated until none of the weights exceeds 10%. In the end of each iteration the Capped Weight  $CW$  per constituent is:

$$CW_i = \begin{cases} W_i + \frac{W_i}{\sum_{k | W_k < 10\%} W_k} \times \sum_{j | W_j \geq 10\%} (W_j - 10\%), & \text{if } W_i < 10\%; \\ 10\%, & \text{if } W_i \geq 10\%. \end{cases}$$

Once the 10% capping condition of the section 3.2 is satisfied for all the weights, the liquidity based capping of the section 3.1 may need to be repeated for some of the adjusted weights, and followed again by the new cycle of the 10% capping of the section 3.2. This iterative process of satisfying both capping criteria would be repeated until neither of the two rules is breached (which is always possible to achieve with limited number of iterations for the expected number of index constituents).

## 4. COMPUTATIONAL ACCURACY

The index will be calculated to 13 decimal figures.

Index values will be rounded to 2 decimal places for dissemination.

## 5. INDEX DIVISOR ADJUSTMENTS

The market capitalization of the index is affected by numerous events other than daily security price changes. At the company level, market capitalizations are affected by share changes caused by corporate actions such as takeovers, acquisitions and spin-offs. Changes also result from company additions and deletions to the index.

In order to insulate the members of the index from the effects of index constituent changes and corporate actions, the index's market capitalization is divided by an adjustment factor called the index divisor. During the trading day, the index is computed by dividing the index's current market capitalization by the divisor value. If there are no corporate actions or constituent changes, the divisor remains unchanged for the next trading day. If there is an event resulting in a capitalization change, the index's new adjusted base market cap is calculated after the close using the adjusted prices and adjusted share figures. Then, a new divisor is calculated for use at the opening on the next trading day. The new divisor links the closing index value to the new adjusted base market capitalization of the index.

## 6. DIVIDENDS AND OTHER DISTRIBUTIONS

For the purposes of the index adjustment, BITA distinguishes between Cash dividends and Special dividends. Cash dividends are treated differently depending on the type of Index.

In a Price Return Index regular Cash dividends are neglected and only the Special dividends are considered.

In a Gross Total Return Index, reinvestments of Cash and Special dividend distributions are included without deducting the withholding tax.

In a Net Total Return Index, reinvestments of Cash and Special dividend distributions are considered after deducting the withholding tax.

Dividend payments and other distributions will lead to a change in the value of the divisor. The new Divisor is calculated as follows:

$$D_{t+1} = \frac{\text{Index Market Cap Open}_{t+1}}{\text{Index Value at Close}_t}$$

For detailed information on dividends treatment, please refer to the [“BITA's Corporate Action Treatment Guide”](#).

## 7. CORPORATE ACTIONS AND OTHER ADJUSTMENTS

All corporate actions and events will be monitored and processed as per the rules and methodologies explicit in "BITA's Corporate Action Treatment Guide".

Shares outstanding for constituents change regularly due to a variety of events and corporate actions. Share changes of less than 10% are implemented at the Ordinary Index Reviews.

If the number of outstanding shares for an index constituent changes by more than 10% due to a corporate action, such as those listed in BITA's Corporate Actions Treatment Guide, the company's share outstanding will be updated after the close of trading on the day prior to the ex-date of the corporate action.

In case of constituents from different countries and/or regions, it is possible that a business day in one country would be a public holiday in the other. In all such cases, the business day is considered valid and the index is calculated and disseminated just like in the normal index days. For the constituents that have a public holiday (i.e. no price movement) on index business day, the real-time forex rate is the only factor contributing to changes in the value of such constituents. In case that the public holiday is in the base currency of the index, then the constituent's prices are kept constant throughout the day.

## 8. CORRECTION AND RECALCULATION

To ensure accuracy, timeliness and consistency of indexes that accurately reflect economic realities, BITA has implemented an Index Correction and Recalculation Policy. Our policy has been drafted in accordance with the IOSCO Principles and the EU Benchmark Regulation directives.

As per our Index Correction and Recalculation Policy, processes are in place to reduce error likelihood, ensure timeliness of identification, avoid subjectivity of corrective decisions and mitigate impact to clients.

While every effort is taken to ensure the accuracy of the index inputs, information and calculation, there is no guarantee that the index will be error-proof. Errors may occur due to data input errors, technology errors, application errors or other reasons.

Any Correction or Restatement made to an Index will be normally communicated to clients via email channels. The communication is done in a standardized format including an explanation of the error, the proposed rectification and the effective date of implementation. BITA's customer service and product development teams stand always available for any additional clarification if necessary. Upon request, error reports are made available to clients.

For detailed information on specific errors, implementation timing and correction processes, please refer to the "BITA Correction and Recalculation Policy".

## 9. MARKET DISRUPTION

In periods of market stress, that might result in inaccurate market prices, delayed data inputs, illiquid constituents or fragmented markets, BITA calculates the Index following predetermined procedures as set out in its "BITA Index Termination and Business Continuity Policy", available at BITA's website.

# Index Governance and Miscellaneous

## 1. METHODOLOGY ADJUSTMENTS AND REVIEWS

The Index Methodology is reviewed on an annual basis by both the BITA Index Management Board and the BITA Oversight Committee, to make sure the Index continues to reflect the economic realities of the market and is not based on obsolete inputs or assumptions.

In case an adjustment to the Methodology is required, a detailed written “BITA Index Methodology Policy” outlines the steps and approvals required to develop, document and approve the Index and its Methodology. The purpose of the BITA Index Methodology Policy is to ensure that the methodology of the Index meets the requirements of Article 12 of the BMR and is implemented according to a robust and reliable process.

## 2. INDEX TERMINATION

When designing an index, BITA puts significant efforts in ensuring that its indexes are sustainable and can stay relevant over time. However, there might be situations (cases where an index ceases to reflect the economic reality of the market it represents, needs data that can no longer be obtained, or fails to keep achieving its objectives) where a cessation of the index may be indicated. For such cases, BITA has developed and adopted an “Index Termination Business Continuity Policy”, that includes the specific processes to identify such events, communicate and consult stakeholders, and setup potential transition plans to reduce the impact for customers and stakeholders.

## 3. INDEX GOVERNANCE BODIES

### 3.1. BITA Oversight Function

The BITA Oversight Function is responsible for the oversight of all aspects related to the provision of benchmarks administered by BITA. The Oversight Function will receive updates from first-line internal governance bodies where appropriate.

### 3.2. BITA Index Management Board (BIMB)

The BITA Index Management Board (BIMB) is responsible for decisions regarding the index composition as well as any changes to the rulebooks and methodology guides. The board also decides about the future composition of the index if any “Extraordinary Event” occurs and requires necessary adjustments.

## 4. TERMINOLOGY

**Adjustable Weighting Factor (AWF)** is the adjustment factor introduced in the index calculation formula so that the index constituent weight capping factor is satisfied. No AWF changes occur due to corporate actions between rebalancing.

The AWF, which is to be applied for each constituent from the rebalancing (effective) date onwards, is calculated (and fixed) on the determination date as:

$$AWF = \frac{CW}{W}$$

Where **CW** is the final Capped Weight of that index constituent calculated on the determination date, and **W** is the unadjusted and uncapped weight based on the free float market capitalisation of that index constituent calculated on the determination date.

**Adjustment Day** is the day in which adjustments to the index divisor are performed. This could be days where reconstitution and rebalancing happen, or alternatively days before the ex-date of a corporate action.

**Average Daily Traded Value** of a stock is the sum of the Daily Traded Value over a specified period divided by the number of trading days over that specified period.

**Benchmark Regulation (BMR):** Regulatory regime for benchmark administrators that ensures the accuracy and integrity of benchmarks. Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 governing Indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014.

**BITA Total Market Global Universe** is a database, elaborated and monitored by BITA, composed of large, mid and small-cap companies publicly listed at worldwide exchanges with strict listing requirements and policies. The BITA Global Index Series provides market coverage for roughly 80 countries across developed, emerging and frontier markets.

**Business Day** is a day on which the relevant stock exchanges are open for trading.

**Capping Factor** is the factor that limits the weight of any index constituent to a maximum pre-defined limit.

**Coordinated Universal Time (UTC)** is the primary time standard by which the world regulates clocks and time.

**Daily Traded Value** of a stock is the product of the closing price of that stock and the number of shares traded on the exchange on that business day.

**Determination Date** is the date used as a reference for the calculation (at the end of day) of index weights and index shares (along with any other key parameters per constituent), which are to be applied at rebalancing/reconstitution in due order.

**End of Day (EoD)** is the index value that is calculated and stored by taking the close price at the end of each business day.

**ET time:** Eastern Standard Time is five hours behind the Coordinated Universal Time standard, written as an offset of UTC - 5:00. That means to find the standard time in the zone you must subtract five hours from Coordinated Universal Time.

**Extraordinary events** are extreme market events that make index adjustments necessary. These events include:

- Merger
- Takeover bid
- Delisting
- Insolvency

A **Merger**, either by acquisition or by forming a new structure, is a binding obligation on the part of the issuer to exchange shares with another legal person, whereby the issuer of the share is the acquiring or remaining company and it does not involve a change in the class or conversion of the shares issued.

A **Takeover bid** is a bid to acquire, an exchange offer or any other offer or act of a legal person that results in the related legal person acquiring, as part of an exchange or otherwise, more than 10% and less than 100% of the voting shares in circulation from the issuer of the index constituent or the right to acquire these shares.

An **Insolvency** occurs with regard to an index constituent if all the shares of the respective issuer must be transferred to a trustee, liquidator, insolvency administrator or a similar public offer as a result of a voluntary or compulsory liquidation, insolvency or winding-up proceedings or comparable proceedings affecting the issuer of the index constituents.

An index constituent is **Delisted** if the exchange announces that the listing of, the trading in, or the issuing of public quotes on the index constituent at the exchange has ceased immediately or will cease at a later date, for whatever reason, and the index constituent is not immediately listed, traded or quoted again on an exchange acceptable to the BIMB.

**Gross Total Return Index** is obtained by reinvesting in the index the ordinary gross dividends declared by the index constituents, and assumes that any cash distributions, such as dividends, are reinvested assuming zero tax rate applicability on such cash distributions.

**Inception Date** refers to the official start date of the index, with the index base value as close value.

**Investable Weighting Factor (IWF)** is the percentage of shares outstanding that are included in the index calculation. In the case of Float-Adjusted Market Cap Weighted Indexes, the total shares outstanding are adjusted so that they exclude from the index calculation all shares not freely available to investors. For Market Capitalization Weighted Indexes, the IWF equals 1.

BITA uses fundamental data from a variety of recognized data vendors to calculate the IWF for each of its index constituents.

The IWF is calculated as: 
$$IWF = \frac{TOS - SCH}{TOS} \text{ or as } IWF = FFF * TOS$$



Where TOS is the total number of shares outstanding, SCH is the number of shares restricted to investors, and FFF is the free float factor of the constituent.

Free float factors are reviewed on a regular basis in line with the rebalancing/reconstitution schedule using the most recent available data.

Changes to the number of shares due to stock dividends, splits, rights issues etc. are implemented immediately and effective the next trading day.

In case of other corporate actions and events, if there is a change of more than 10% in the SOC, BITA will announce the update in SOC immediately and the adjustment comes into effect two trading days after the announcement. All other applicable changes are announced on the next underlying data announcement date, implemented on the index review date and effective the next trading day after implementation.

**Market Capitalization** is calculated as the product of the number of shares outstanding of the share class and the share price.

The index **Divisor** is an arbitrary number that is first defined when an index is first published. Its initial use is to divide the total value of the index to produce an index value that is easy to handle. Subsequently, the index divisor remains constant and requires adjustments, either when rebalancing and reconstituting or through corporate action treatments.

**Pro-forma Files** distributed to the Index subscribers during the **Pro-forma Period** (i.e. the period between the determination date and the effective date of the upcoming rebalancing/reconstitution) contain the preliminary Index weights, index shares and other relevant parameters per constituent intended for the upcoming rebalancing. The pro-forma file is typically provided daily during the pro-forma period. At the Index rebalancing (and during the proforma period), the actual weights of each security typically differ from the corresponding weights fixed on the determination date due to the relevant market movements realized during the pro-forma period, while the index shares remain the same as on the determination date.

**Total Number of Shares Outstanding (TOS)** of an index constituent on any given business day refers to a company's stock currently held by all its shareholders, including share blocks held by institutional investors and restricted shares owned by the company's officers and insiders.

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