

BITA

Index Methodology Guidebook

BITA Global Copper Mining Select NTR Index

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Log of Amendments

1. **01.11.2023** - v.1.0. First publication of methodology guide.



Introduction and Background

ABOUT THE INDEX

The BITA Global Copper Mining Select NTR Index aims to track the performance of companies that are publicly listed on recognized, global exchanges, that derive significant revenues from the mining of copper as well as downstream and upstream operations such as exploration and refining. The index constituents are weighted based free-float market capitalization modified by thematic exposure and rebalanced 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 management infrastructure, 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 owned, calculated, administered, and disseminated by BITA GmbH.



Index Characteristics and Specifications

1. GENERAL INFORMATION AND INDEX OBJECTIVES

The BITA Global Copper Mining Select NTR Index (hereafter “The Index”) aims to track the performance of companies that are publicly listed on recognized, global exchanges, that derive significant revenues from the mining of copper as well as downstream and upstream operations such as exploration and refining. The index constituents are weighted based free-float market capitalization modified by thematic exposure and rebalanced on a quarterly basis. Index values are disseminated on an intraday and end-of-day basis.

- **Inception Date:** 15.11.2023
- **Index value at inception:** 1000
- **Return Calculation:** Net Total Return
- **Weighting Mechanism:** Modified Free-Float Market Capitalization
- **Rebalancing Frequency:** Quarterly
- **Reconstitution:** Quarterly
- **Number of Constituents:** Variable

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	Ticker
BITA Global Copper Mining Select NTR Index	Net Total Return		BGCMSI

3. EU BENCHMARKS REGULATION CONSIDERATIONS AND STATEMENT

BITA GmbH is the benchmark “administrator” of the BITA Global Copper Mining Select NTR Index, the “Benchmark” or “Index”¹.

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

¹The 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”).



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 Index, please refer to the “[Index website page](#)”.

This Methodology guide should be read in conjunction with the Index’s Benchmark Statement and other associated BITA Governance policies and methodology documents. These documents are highlighted whenever referenced in this Methodology guide. They are also available on BITA’s website (<https://bita.io/governance>).

4. INPUT DATA

In line with the input data requirements under the Article 11 of the Regulation (EU) No 596/2014 (the “Benchmarks Regulation” or “BMR”), the 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 1-second 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 9:00hrs and 22:00hrs 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.



Index Methodology

1. UNIVERSE CONSTRUCTION

1.1. Initial Universe

The BITA Copper Mining Industry Universe is composed of global, publicly listed securities, issued by companies with products, services, and activities contributing to solutions in the following areas or subthemes:

- A. Copper Mining:** Companies that derive revenue from copper mining and site development.
- B. Copper Explorations:** Companies that derive revenue from the value chain preceding the actual site development and extraction of the copper ore.
- C. Copper Refining:** Companies that derive revenue from the value chain post mining until product manufacturing, such as refining and other processing of the copper ore.
- D. Copper Royalties:** Companies that derive revenue from contracts, royalties, etc.

BITA approaches the construction and research of Themes through the mapping of products, services, and business activities (“PSA”) into a set of granular (“Sub-Themes”) designed to facilitate the construction of heavily focused index and data products.

Sub-Themes are finally grouped together into overarching Themes, allowing for the assessment of a company through a variety of lenses, capturing to the detail the different exposures that a company might have not only to revenue reporting lines, but also to technologies, consumer trends, business models, and other relevant perspectives.

In order to provide an objective measure of the level of exposure of a company to a particular Theme, Sub-Theme and PSA, BITA has developed an objective score, called the BITA Thematic Exposure Score.

Revenue-based Thematic Exposure Scores are determined through an in-depth analysis of a company’s business footprint via the collection of publicly available data provided by the company in regulatory filings (such as Annual Reports, 10-Ks, 10-Qs, 20-Fs, 8-Ks), quarterly earnings reports, investor presentations, official earnings conference call transcripts, as well as credible news sources.

A company’s total Thematic Exposure Score is equivalent to the sum of the revenue derived by the company from each relevant PSA, as a proportion of the company’s total revenue.

The following requirements determine the securities that enter the Index Initial Universe:

- A. Country requirement:** Securities with one of the following BITA Assigned Countries are excluded: India, Indonesia, Malaysia, Philippines, Russia, South Korea, Sri Lanka, Thailand, Vietnam, or Zimbabwe.
- B. Exchange requirement:** Only securities listed at one of the eligible exchanges included in Annex A are admitted. Securities trading on the Shanghai and Shenzhen stock exchanges must be available through Hong Kong Stock Connect.



C. Thematic requirement: Securities issued by companies in the thematic universe can enter the Index Initial Universe through one of two means:

- a. **Thematic exposure (purity leaders):** Securities of companies with a thematic exposure equal to or greater than 30% of their total revenue are included.
- b. **Thematic revenue dollars (revenue leaders):** The thematic revenue dollar amount for each company is determined by taking the company's total revenue and multiplying it by its thematic exposure percentage. The securities from the top 5 companies ranked by their absolute thematic revenue dollar amount are chosen for inclusion in the Index Initial Universe.

1.2. Eligible Universe

The final eligible universe is constructed after the application of the following screens and filters:

- A. Minimum size requirement:** Securities of companies with a market capitalization below USD 100 million are excluded.
- B. Minimum liquidity requirement:** Securities with a 3-month ADTV below USD 100,000 are excluded.

After all the filters, screens, and adjustments are applied, the resulting basket of securities will be considered the Eligible Universe of the Equity Portfolio.

2. INDEX CONSTITUENT SELECTION

2.1. Index Ranking

All securities that enter the eligible universe are selected as constituents.

2.2 Security Considerations

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

3. INDEX WEIGHTING

On the Determination Day, index constituents are weighted using a modified free float market capitalization algorithm adjusted by their thematic exposure as follows:

1. Z-Scores of the free float market capitalizations are generated:

$$ZScore_n = \frac{FFMC_n - \mu}{\sigma}$$

Where:

n is a constituent in the final portfolio

FFMC_n is the free float market capitalization of constituent **n**

μ is the mean of the free float market capitalizations of all constituents

σ is the Standard Deviation of the free float market capitalizations of all constituents



2. Z-Scores are Winsorized to a value of 2.

$$\begin{aligned} ZScore_n > 2 &\rightarrow 2 \\ ZScore_n < -2 &\rightarrow -2 \end{aligned}$$

3. Z-Scores are turned into positive values:

$$\begin{aligned} ZScore_n > 0 &\rightarrow 1 + ZScore \\ ZScore_n < 0 &\rightarrow (1 - ZScore)^{-1} \end{aligned}$$

4. The positive Z-Score values are multiplied by their thematic exposures to determine the Weighting Factors:

$$Weighting\ Factor_n = ZScore_n * Thematic\ Exposure_n$$

5. Constituents are weighted proportionally to their Weighting Factors:

$$Weight_n = \frac{WF_n}{\sum_{n=1}^i WF_n}$$

4. 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.

4.1. Liquidity Capping

The initial weights of each constituent are reviewed and adjusted (if required) through a liquidity optimization process that limits single day trading to 25% of value traded for any constituent given a theoretical \$25,000,000 inflow.

The liquidity-adjusted weights are iteratively calculated as follows:

i) Liquidity thresholds are set:

- 90-day Average Daily Value Traded (**ADV\$_i**) for the *i*-th constituent is calculated based on daily closing price and number of shares traded;
- The **ADTV** threshold (**ADTVTH**) for the Percentage of 90-day Average Daily Value Traded (**ADV%_i** for the *i*-th constituent) is set to 25%;
- Investment threshold **ITH** is set to \$25,000,000;
- Liquidity threshold weight for the *i*-th constituent is calculated based on the investment threshold **ITH** and **ADTVTH** as follows:

$$W'_i = \left(\frac{ADTVTH \times ADV\$_i}{ITH} \right)$$

- ii) The **ADV%_i** 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_i is the calculated weight of the i-th constituent

ADV%_i = Percentage of 90-day Average Daily Value Traded for the i-th constituent

ADV\$_i = 90-day Average Daily Value Traded for the i-th constituent

iii) If the constituent **ADV%_i** 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%_i** 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) below).

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:

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:

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

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 which constituents' weights are in scope: those with **ADV%_i** greater or lower than the **ADTV** Threshold **ADTVTH**.

The weight of constituents with an **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.

4.2. Individual Security Capping

To avoid undue concentration, the weights of all index constituents after each iteration of liquidity adjustment are subject to the following capping constraints:

- The weights of each issuer cannot exceed 10% the total index weight.
- The cumulative weight of all constituents representing more than 4.5% of the index cannot exceed 45% of the total index weight.

The weights in excess are redistributed proportionally among the rest of the uncapped securities.

4.3. Geographic Capping

The sum of the weights of all index constituents that have a BITA Assigned Country that is classified as an Emerging Market is capped at 40% of the total index weight. If the sum is greater than 40%, the weights of all Emerging Market securities are reduced proportionally until they sum to 40%. The weights in excess are redistributed proportionally among the uncapped Developed Market securities.

Once the individual security and group capping conditions outlined in sections 4.2 and 4.3 are satisfied, the liquidity-based capping may need to be reiterated on additional cycles on each determination date.

This iterative process of satisfying all capping criteria is repeated until none of the rules are breached.

4.4 Individual Security Flooring

After all capping constraints have been satisfied, the weights of all index constituents are subject to the following flooring constraints:

- A floor of 0.1% is applied to all securities.
- In cases where securities have been liquidity capped at less than 0.1%, the floor is relaxed for these securities to allow for liquidity capping.

5. INDEX REVIEW SCHEDULE

5.1. Ordinary Adjustments

The Index is reconstituted and rebalanced quarterly in March, June, September, and December at the Close of Business (COB) on the 3rd Friday of the rebalancing month 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 daily, covering the period between the Determination and Effective dates (proforma period).



Deletion Replacement rules: None.

5.2. Extraordinary Adjustments

BIMB may decide to substitute an index constituent or perform an extraordinary adjustment to the index upon the occurrence of an extraordinary event as deemed by BIMB or according to the “BITA Corporate Actions Treatment Guide”. In such cases, BITA will announce the index adjustment with a notice period of at least 2 trading days (with respect to the affected constituent) on BITA’s website and proceed to its implementation after the close of business on the effective date as specified in the aforementioned announcement.



Index Calculation

1. INDEX FORMULA

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

$$Index\ Value_t = \sum_i \frac{P_{i,t} * IWF_{i,t} * TOS_{i,t} * AWF_{i,t} * F_{i,t}}{D_t}$$

Where:

P_{i,t}= Price of the constituent ‘i’ at time t

IWF_{i,t}= Investable Weighting Factor of constituent ‘i’ at time ‘t’

TOS_{i,t}= Total no. of Shares Outstanding of constituent ‘i’ at time ‘t’

AWF_{i,t}= Adjustable Weighting Factor for constituent ‘i’ at time ‘t’

F_{i,t}= Foreign exchange Rate for constituent ‘i’ at time ‘t’

D_t= Divisor Value at time ‘t’

The initial divisor (at inception **t = t₀**) value is calculated according to the following formula:

$$D_{t_0} = \frac{\sum_i (P_{i,t_0} * IWF_{i,t_0} * TOS_{i,t_0} * AWF_{i,t_0} * F_{i,t_0})}{Initial\ Index\ Value}$$

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. COMPUTATIONAL ACCURACY

The index will be calculated to 13 decimal figures.

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

3. 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.

4. 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 considered without performing deductions due to withholding taxes.

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".

5. 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 change 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.

6. 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”](#).

7. 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. ESG FACTORS DISCLOSURE

Explanation of how ESG Factors are reflected in the key elements of the benchmark methodology

Name of the benchmark administrator.	BITA GmbH
Type of benchmark or family of benchmarks. Choose the relevant underlying asset from the list provided in Annex II to Commission Delegated Regulation (EU) 2020/1816.	Equity
Name of the benchmark or family of benchmarks.	BITA Global Copper Mining Select NTR Index
Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	No

Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets.

(a) List of environmental factors considered:	By Exclusion: None By Selection: None By Weighting: None
(b) List of social factors considered:	By Exclusion: None By Selection: None By Weighting: None
(c) List of governance factors considered:	By Exclusion: None By Selection: None By Weighting: None

Data and standards used:

(a) Data input. (i) Describe whether the data are reported, modelled, or sourced internally or externally. (ii) Where the data are reported, modelled, or sourced externally, please name the third-party data provider.	Not Applicable.
(b) Verification and quality of data. (i) Describe how data are verified and how the quality of those data is ensured.	When external ESG and Impact Data vendors are used, a verification process is conducted to ensure that the provider has implemented processes and procedures that: i) are in line with established market standards and, ii)



	<p>ensure the representativeness and reliability of the submitted data.</p> <p>When necessary, additional checks for abrupt changes or inconsistent data points are conducted, and when applicable, a further request for clarification is submitted to the vendor.</p>
<p>c) Reference standards.</p> <p>(i) Describe the international standards used in the benchmark methodology.</p>	<p>The index methodology is constructed in line with the IOSCO standards for financial benchmarking, as well as market standards required by the Regulation (EU) 2016/2011 “Benchmark Regulation” (BMR).</p>



5. 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 for each constituent on the determination date is calculated as:

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

Where CW is the Capped Weight of that index constituent calculated on the determination date, and W is the uncapped weight (based on the free-float market capitalization) 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.

BITA Assigned Country is a composite country flag, determined by BITA, based on publicly available information regarding the companies' country of incorporation, country of headquarters and country of primary operations.

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.

Business Day is a day on which an exchange is open for the buying and selling of securities, generally occurring on weekdays between normal business hours.

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 (at end of day) used as a reference for the determination of index constituents, as well as index shares and parameters, which are to be applied at rebalancing/reconstitution.



End of Day (EoD) Index Values are the official index close levels calculated and stored, using official exchange close prices, at the end of each business day.

ET time: Eastern 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 one must subtract five hours from Coordinated Universal Time. During the daylight-saving adjustment period (March-October), the difference is four hours.

CET time: Central European Time is one hour ahead of the Coordinated Universal Time standard, written as an offset of UTC + 1:00. That means to find the standard time in the zone one must add one hour to Coordinated Universal Time. During the daylight-saving adjustment period (March-October), the difference is two hours.

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

- Merger
- Takeover bid
- Delisting
- Insolvency

For an exhaustive list, please refer to [BITA Equity Corporate Actions Treatment Guide](#).

Gross Total Return Index is obtained by reinvesting in 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.

Net Total Return Indexes is obtained by reinvesting in the index the ordinary net dividends (i.e less withholding taxes) declared by the index constituents, and assumes that any cash distributions, such as dividends, are reinvested with the corresponding tax rate applied on such cash distributions.

Price Return Indexes is obtained by tracking the plain prices of the index constituent instruments, unadjusted with the respect to any possible dividends or other cash payouts from the instruments.

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.

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:

$$IWF = \frac{TOS - SCH}{TOS}$$

Where **TOS** is the total number of shares outstanding, **SCH** is the number of shares restricted to investors.



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 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 for the upcoming rebalancing/reconstitution. While the index shares remain constant (unless affected by corporate actions) during the Pro-forma Period, the index weights will move along with the market.

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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Annex

A. LIST OF ACCEPTED EXCHANGES

Australian Stock Exchange	XASX
Bolsas y Mercados Espanoles	BMEX
Borsa Italiana	XMIL
Deutsche Börse	XETR
Euronext Amsterdam Stock Exchange	XAMS
Euronext Brussels	XBRU
Euronext Irish Stock Exchange	XDUB
Euronext Lisbon	XLIS
Euronext Oslo Børs	XOSL
Euronext Paris Exchange	XPAR
Hong Kong Stock Exchange	XHKG
London Stock Exchange	XLON
Nasdaq Copenhagen	XCSE
Nasdaq Helsinki	XHEL
Nasdaq Stock Exchange	XNAS
Nasdaq Stockholm	XSTO
New York Stock Exchange	XNYS
NYSE American	XASE
NYSE Arca	ARCX
Shanghai Stock Exchange	XSHG
Shenzhen Stock Exchange	XSHE
Singapore Exchange	XSES
SIX Swiss Exchange	XSWX
Taipei Exchange	ROCO
Taiwan Stock Exchange	XTAI
Tel-Aviv Stock Exchange	XTAE
Tokyo Stock Exchange	XJPX
Toronto Stock Exchange	XTSE
TSX Venture Exchange	XTSX



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