

**Index Methodology Guide for the  
NYSE FactSet Global Robotics and  
Artificial Intelligence Index™**

Version 2.0 – June 7, 2019

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## Version History

### Version 2.0 (Effective June 7, 2019)

The methodology document includes formatting and language updates, along with clarifications and minor updates to the timing of the Index Reconstitutions and Rebalances. It also includes the Net Total Return variant of the Index and includes a section relating to backtest considerations.

### Version 1.0 (Effective May 11, 2018)

The methodology document covers the newly-launched NYSE® FactSet® Global Robotics and Artificial Intelligence Index™.

## 1. Index summary

<b>Factsheet</b>	
<b>Full Name</b>	NYSE <sup>®</sup> FactSet <sup>®</sup> Global Robotics and Artificial Intelligence Index™
<b>Index Tickers</b>	Price Return (USD): NYFSRAI Gross Total Return (USD): NYFSRAITNet Total Return (USD): NYFSRAIN
<b>Index Description</b>	The NYSE <sup>®</sup> FactSet <sup>®</sup> Global Robotics and Artificial Intelligence Index™ is a rules-based equity benchmark designed to track the performance of globally listed companies involved in Robotics and Artificial Intelligence. Index compositions and corporate actions, including rebalance information, can be accessed from ICE Data Services at <a href="https://www.theice.com/market-data/indices/equity-indices/products">https://www.theice.com/market-data/indices/equity-indices/products</a> .
<b>Eligible Stocks</b>	Common stocks, ADRs, or GDRs of selected companies involved in Robotics and Artificial Intelligence and are listed for trading and electronically quoted on a major stock market that is accessible by foreign investors.
<b>Number of Constituents</b>	Variable
<b>Weighting</b>	Equal dollar-weighted
<b>Index Reconstitutions</b>	The Index is reconstituted annually after the close of the third Friday in December each year (“Reconstitution Date”). If the Reconstitution Date is a holiday, it will occur on the next Index Business Day.
<b>Index Rebalances</b>	Index constituent weights are rebalanced semi-annually after the close of the third Friday in June and December each year (“Rebalance Date”). If the Rebalance Date is a holiday, it will occur on the next Index Business Day.
<b>Calculation Frequency</b>	Price and Total Return: Every 15 seconds between 09:30 & 19:00 ET
<b>Base Date</b>	December 21, 2012
<b>Base Level</b>	1000.00
<b>Historic Data Available Since</b>	December 21, 2012
<b>Bloomberg Code</b>	NYFSRAI <INDEX> / NYFSRAIT <INDEX> / NYFSRAIN <INDEX>
<b>Reuters Code</b>	.NYFSRAI / .NYFSRAIT / .NYFSRAIN
<b>Launch Date</b>	May 11, 2018
<b>Website</b>	<a href="https://www.theice.com/market-data/indices">https://www.theice.com/market-data/indices</a>

## 2. Governance

### Index Sponsor & Administrator

ICE Data Indices, LLC (“IDI”) is the Index Sponsor and the Index Administrator.

The NYSE® FactSet® Global Robotics and Artificial Intelligence Index™ is calculated and maintained by IDI based on a methodology developed by IDI, and which uses industry classifications developed and maintained by FactSet Research Systems Inc. (“FactSet”).

IDI is responsible for the day-to-day management of the Index in accordance with its rules, including retaining primary responsibility for all aspects of the Index determination process, including implementing appropriate governance and oversight, as required under the International Organization of Securities Commission’s Principles for Financial Benchmarks (the IOSCO Principles). The IDI Governance Committee is responsible for helping to ensure IDI’s overall compliance with the IOSCO Principles, by performing the Oversight Function which includes overseeing the Index development, design, issuance and operation of the Indices, as well as reviewing the control framework. IDI is also responsible for decisions regarding the interpretation of these rules and the Governance Committee is responsible for reviewing all rulebook modifications with respect to the Index to ensure that they are made objectively, without bias, and in accordance with applicable law and regulation and IDI’s policies and procedures.

Consequently, all IDI and the Governance Committee discussions and decisions are confidential until released to the public.

### Cases not covered in rules

In cases which are not expressly covered in these rules, operational adjustments will take place along the lines of the aim of the Index. Operational adjustments may also take place if, in the opinion of the Index Administrator, it is desirable to do so to maintain a fair and orderly market in derivatives on this Index and/or this is in the best interests of the investors in products based on the Index and/or the proper functioning of the markets.

Any such modifications described under this section or exercise of Expert Judgment will also be governed by any applicable policies, procedures and Guidelines in place by IDI at such time.

### Rule book changes

The Governance Committee reviews all rule book modifications and Index changes to ensure that they are made objectively, without bias and in accordance with applicable law and regulation and IDI’s policies and procedures. These rules may be supplemented, amended in whole or in part, revised or withdrawn at any time in accordance with applicable law and regulation and IDI applicable policies and procedures. Supplements, amendments, revisions and withdrawals may also lead to changes in the way the Index is compiled or calculated or affect the Index in another way.

### Limitations of the Index

The Index may be subject to potential limitations, such as a decline in the pool of available eligible securities due to advancements in technology, shifts in demographic spending or the economy, changes in regulation or accounting rules, consolidation in certain sectors or industries, or other factors. Other limitations may include the ability of the Benchmark to operate in illiquid or fragmented markets.

By design, this Index is focused on representing the Robotics and Artificial Intelligence industry and is therefore expected to be heavily weighted towards a few sectors. Should the underlying markets transform due to consolidation and technology transformation, the companies included in the Index will adjust and change accordingly.

IDI seeks to manage and mitigate these limitations through the Benchmark design, review and oversight process.

### 3. Index Description

The NYSE® FactSet® Global Robotics and Artificial Intelligence Index™ is a rules-based equity benchmark designed to track the performance of globally listed companies involved in Robotics and Artificial Intelligence.

The NYSE® FactSet® Global Robotics and Artificial Intelligence Index™ is compiled utilizing RBICS (Reverse Business Industry Classification System) classifications licensed from FactSet.

## 4. Publication

### 4.1 The opening, intraday and closing or daily publication of Index values.

#### **Opening**

The first Index level is calculated and published at 09:30 ET, when the U.S. equity markets open for their regular trading session. The calculation of that level utilizes the most updated prices available to IDI at that moment from any exchange, including the official primary exchange. In the case of constituents that have a non-traded, halted or suspended status, or have not opened for the current day, the previous day's reference prices (primary exchange official closes) or estimated prices (for IPOs, buyouts and swap offers) are used.

#### **Dissemination frequency**

The level of the price return and total return Indices is published every 15 seconds to the ICE Data Global Index Feed (ICE Data GIF). The calculated Index levels incorporate, as available to IDI, the latest traded price of each constituent from within the regular trading session of their respective market. If the last traded price of a constituent is not available to IDI, the previous day's reference price (typically primary exchange official closes) is used. For U.S. equities, intraday calculations of the Index would incorporate trades on a consolidated level, from all exchanges including those not designated as the official primary exchange. For international equities, intraday calculations of the Index would solely incorporate trades made on the security's primary exchange.

The Index is calculated from 09:30 until 19:00 ET on those days specified as Index Business Days. Index Business Days will be classified as days on which the U.S. Equity Markets (e.g. NYSE, NASDAQ and NYSE American) are open for a full or partial day of trading.

#### **Closing level**

The closing level is the last level disseminated on the trading day and uses the official close prices from the primary listing market for each constituent. For constituents that have non-traded, halted or suspended status, or have not opened for the current day, the previous day's reference prices (primary exchange official closes) or estimated prices (for IPOs, buyouts and swap offers) are used instead. The currency rate that will be utilized in the calculation of the closing level is the current day's London 4:00 PM WM/Reuters Spot FX rate, or if not available, the prior day's relevant London 4:00 PM WM/Reuters Spot FX rate. In the case of exceptional market conditions, the Index Administrator reserves the right to utilize other prices in the calculation of the official closing level, as indicated below in Section 4.2.

#### **Sources of Data**

The Consolidated Tape (CTS/UTDF) is the primary market data source for U.S. equity real-time and closing prices. The ICE Data Services Consolidated Feed is the primary market data source utilized for retrieving real-time and closing prices for international (ex-U.S.) equities and real-time spot currencies, all for use in Index calculations. Closing spot currencies utilized for constituent conversion or Index level conversion are sourced from WM/Reuters Spot FX fixings, specifically the 4 PM London fixing. Additional sources of data less commonly used include market data vendors, company announcements, exchange announcements and other official sources.

## 4.2 Exceptional market conditions and corrections

The Index Administrator retains the right to delay the publication of the opening level of the Index. Furthermore, the Index Administrator retains the right to suspend the publication of the level of the Index if it believes that circumstances prevent the proper calculation of the Index.

If Index constituent prices are cancelled, the Index will not be recalculated unless the Index Administrator decides otherwise.

Reasonable efforts are made to ensure the correctness and validity of data used in real-time Index calculations. Where errors have occurred in the determination or calculation of an Index closing value, the decision to make a restatement will be assessed on a case by case basis. Such decision will take account of the significance, impact, age and scale of the error.

There is the possibility of an exchange or market-wide event resulting in the normal closing auction not going off or official closing prices not being available. In those situations, the Index will take guidance from the respective exchange(s) and address on an event-by-event basis. Exchange or market-wide events include, but are not limited to, the following:

- Volatility Halts
  - LULD (Limit Up / Limit Down)
  - Market Wide Circuit Breaker
- Technological Problems / Failures
- Natural Disaster or Other BCP-Related Event

## 4.3 Changes to the Index

### **Announcement policy**

Changes to the Index methodology will be announced by an Index announcement which will be distributed by IDI via [www.theice.com/market-data/indices/equity-indices](http://www.theice.com/market-data/indices/equity-indices) and ICE Data Services at [www.theice.com/market-data/indices/equity-indices/products](http://www.theice.com/market-data/indices/equity-indices/products).

As a general rule, the announcement periods that are mentioned below will be applied. However, Emergency actions, including urgently required corporate action treatments, often resulting from late notices from the relevant company or exchange, may require the Index Administrator to deviate from the standard timing.

### **Inclusion of new constituents**

The inclusion of new companies in the Index will typically only occur during the annual Reconstitutions, although there could be exceptions based on a specific corporate action affecting a current constituent. The inclusion of the new company will be announced at least two trading days before the effective date of the actual inclusion, although as it relates to a scheduled Reconstitution the announcement would occur after the close of trading on the Monday preceding the second Friday of the relevant month. For example, for the Reconstitution effective for market open on December 23, 2019, the announcement would occur after the close on December 9, 2019.

## **Removal of Constituents**

Components would be removed from the Index as a result of periodic corporate actions as well as the results of the annual Reconstitution and semi-annual Rebalance. All removals will be announced at least one trading day before the effective date of the removal, although as it relates to a scheduled Reconstitution or Rebalance the announcement would occur after the close of trading on the Monday preceding the second Friday of the relevant month. It should be noted that in the case of mergers and acquisitions, every effort will be made to remove the company at some reasonable time ahead of the suspension in trading in the acquired company. There will be certain situations and corporate actions that would require the removal of a company that has already ceased trading. In those cases, the company will be removed from the Index at its last traded price, or, at the discretion of the Index Administrator, at a derived price that most accurately represents its post-suspension value.

## **Corporate actions**

In case of an event that could affect one or more constituents, the Index Administrator will inform the market about the intended treatment of the event in the Index shortly after the firm details have become available and have been confirmed. When possible, the corporate action will be announced, even if not all information is known, at least one trading day before the effective date of the action. Once the corporate action has been effectuated, the Index Administrator will confirm the changes in a separate announcement.

## **Reconstitution/Rebalance: Publication of Results**

The new composition of the Index, including the companies to be a part of the Index and their corresponding new Index shares, will be announced after the close of trading on the Monday preceding the second Friday of the relevant month and can be accessed from ICE Data Services at [www.theice.com/market-data/indices/equity-indices/products](http://www.theice.com/market-data/indices/equity-indices/products).

## **Index Reviews**

IDI shall undertake regular reviews of the Index, the methodology and the market which it represents to ensure it continues to meet the Index objective, in accordance with IDI's policies and procedures. Should changes to the Index be required or proposed, this will be communicated to stakeholders in accordance with IDI's policies and procedures.

## **Consultations**

IDI may from time to time consult with stakeholders on proposed material changes that affect the Index in accordance with IDI's policies and procedures [https://www.theice.com/publicdocs/Consultation\\_Policy.pdf](https://www.theice.com/publicdocs/Consultation_Policy.pdf). Such proposals shall be published to stakeholders and all feedback received will be considered by the Index Administrator. Any resulting changes to the Index will be announced prior to it being implemented.

## **Rule changes**

Barring exceptional circumstances, the Index Administrator shall announce Rule changes to stakeholders prior to implementation. The announcement will include the date on which the changes shall take effect.

## 5. Calculation

### 5.1 Calculation of the Index

The Index is calculated on a Price Return, Gross Total Return, and Net Total Return basis in USD. The current Index level is calculated by dividing the current modified Index market capitalization by the Index divisor. The divisor was set on the Index Inception Date (i.e. the backtest start date) to yield an Index level of 1000.00. The divisor is updated as a result of corporate actions and composition changes.

A full description of the formulae used to calculate Index values can be found in the “NYSE Indices - Guide to Index Mathematics” at <https://www.theice.com/market-data/indices/equity-indices/methodologies>.

## 6. Index Reconstitutions and Rebalances

### 6.1 General aim of Reconstitutions and Rebalances and frequency

#### **General aim of the periodical Reconstitution or Rebalance**

The general aim of the semi-annual Rebalance and annual Reconstitution of the Index is to ensure that the selection and weightings of the constituents continue to reflect, as closely as possible, the Index's objective of identifying, selecting and tracking the performance of stocks from the Robotics and Artificial Intelligence industry, based on sector classifications provided by FactSet. The Index Administrator reserves the right to, at any time, change the number of stocks comprising the Index by adding or deleting one or more stocks, or replacing one or more stocks contained in the Index with one or more substitute stocks of its choice, if in the Index Administrator's discretion such addition, deletion or substitution is necessary or appropriate to maintain the quality and/or character of the Index. Such Index constituent changes are reviewed by the Governance Committee to ensure that they are made objectively, without bias and in accordance with applicable law and regulation and IDI's policies and procedures.

#### **Frequency**

Changes to the Index composition and constituent weights may occur during a scheduled Reconstitution and Rebalance and as a result of the removal of an Index constituent. During the semi-annual Rebalances, components may be removed from the Index if they do not meet the market capitalization and liquidity criteria as laid out in Section 6.2. Components will not be added to the Index during the semi-annual Rebalances.

The Index is reconstituted annually after the close of the third Friday in December each year ("Reconstitution Date"). Index constituent weights are rebalanced semi-annually after the close of the third Friday in June and December each year ("Rebalance Date"). If the Reconstitution Date or Rebalance Date is a holiday, it will occur on the next Index Business Day.

The data used to reconstitute and rebalance the Index is as of the close of business on the first Friday in June and December ("Reference Date").

### 6.2 Index universe and selection principle

#### **Constituent Selection and Weighting Schema**

The following rules are used for the initial constituent selection and ongoing Reconstitutions.

1. Starting universe: Common stocks, ADRs, or GDRs of companies that are primarily listed for trading and electronically quoted on a major stock market that is accessible by foreign investors in one of the following countries:

<b>Eligible Countries</b>		
Australia	Hungary	Poland
Austria	Iceland	Portugal
Belgium	India	Singapore
Brazil	Indonesia	South Africa
Canada	Ireland	Republic of Korea (South Korea)
Chile	Israel	Spain
Colombia	Italy	Sweden
Czech Republic	Japan	Switzerland
Denmark	Malaysia	Taiwan
Egypt	Mexico	Thailand
Finland	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Norway	United States
Greece	Peru	
Hong Kong	Philippines	

- Securities must have a minimum float-adjusted market capitalization of \$500 million or greater, and a three-month Average Daily Trading Value (ADTV) of \$2 million or greater on the Reference Date.

Existing constituents may remain in the Index if they have a minimum float-adjusted market capitalization of \$400 million or greater, and a three-month ADTV of \$1.5 million or greater on the Reference Date.

- Select companies that are classified as deriving 50% or more revenues from one of the following (22) RBICS Focus Level 6 industry classifications provided by FactSet, which are considered to be exposed to the Artificial Intelligence & Robotics theme, either because of R&D they are involved in, or the products and services they provide. This list of industries will be evaluated periodically and may change over time as the Robotics and Artificial Intelligence industry evolves.

<b>Eligible RBICS Level 6 Industries</b>	
Business Intelligence Software	3D Modeling/Rapid Prototyping Automation Providers
Communication and Collaboration Content Sites	Computer Aided Design (CAD) Software
Diversified Customer Relationship Software	Household Robots
Media Download and Streaming Digital Content Sites	Industrial Robots and Robotic Assembly Line Makers
Mobile Platform Applications Software	Machine Vision and Quality Control Manufacturing
Other Hosting Services	Microprocessor (MPU) Semiconductors
Other Programmable Logic and ASIC Semiconductors	Motion Control and Precision Motors Manufacturing
Programmable Logic Device Semiconductors	Other Communications Semiconductors
Video Multimedia Semiconductors	Other Processor Semiconductors
Web Navigation Sites and Software	Smart Phone Manufacturing
Web Search Sites and Software	Surgical Robotic Systems

4. In addition, select companies that are market leaders in one of the (22) aforementioned RBICS Level 6 industry classifications in Step 3 above (but are not classified as Focus). Market leadership is defined as:
  - a. Having a 20% or more market share in one of the (22) aforementioned RBICS Level 6 industry classifications or;
  - b. Generating \$1 billion or more in absolute annual revenues from one of the (22) aforementioned RBICS Level 6 industry classifications
5. Companies selected in Steps 3 and 4 are included in the Index.

### **6.3 Weighting methodology and periodical update of weighting**

Constituent weights are determined by dividing the total number of qualifying constituents into 100%, so that each one represents an equal percentage amount in the Index.

#### **Determining constituent weightings at Semi-Annual Index Rebalances and Annual Reconstitution**

At semi-annual Index Rebalances and Annual Reconstitutions, constituent weights are adjusted so that each one represents an equal percentage amount in the Index, based upon company data as of the Reference Date. At the semi-annual Rebalance, the portfolio is tested for market capitalization and liquidity based on the principles in Section 6.2 above.

Constituent percentage weights as determined in the Reconstitution and Rebalance process outlined above are converted to Index shares to be implemented on the effective date using information from the Reference Date. Subsequent adjustments to the Index composition may be made to account for corporate actions that occur between the Reference Date and the Rebalance or Reconstitution Date.

The newly adjusted portfolio becomes the basis for the Index's value effective on the first trading day following the semi-annual adjustments. The divisor will be adjusted to ensure continuity of the Index's value.

### **6.4 Special considerations for Index backtest**

For the backtest of the Index, the percentage weights for Reconstitutions and Rebalances were converted to Index shares and implemented after the close of the third Friday of the month. Corporate actions were adjusted for in the Index backtest; however, the exact treatment in the backtest and live Index may differ due to differences in timing and knowledge of those actions. For example, special cash dividends, spin-offs and rights issues that are reinvested back into the parent company in the live Index were instead reinvested proportionately across the Index constituents based on weighting in the calculation of the backtest of the Index.

## 7. Corporate Actions

### 7.1 General

Apart from normal Rebalance and Reconstitution changes, the Index composition may be adjusted at other times in order to maintain the continuity of the Index level and the composition. The underlying aim is that the Index continues to reflect as closely as possible the Index's objective of tracking the performance of globally listed companies involved in the Robotics and Artificial Intelligence industry.

Adjustments take place in reaction to events that occur with constituents in order to mitigate or eliminate the effect of that event on the Index performance.

A full description of standard corporate action events and their handling can be found in the "NYSE Indices - Corporate Action Handling Guide" at <https://www.theice.com/market-data/indices/equity-indices/methodologies>.

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Historical returns and weights before the launch date of an Index are based upon backtested data. For the period prior to the launch date of an Index, simulated performance data has been provided as an illustration of how the Index would have performed during the relevant period had the Index been calculated by IDI using the current Index methodology. Such simulated performance data has inherent limitations, as the simulated data is produced by the retroactive application of the methodology. Simulated performance data is based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance and may reflect a bias toward strategies that have performed well in the past.

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