



**ICE[®] FactSet[®] Global NextGen
Communications Index[™] (ICEFSNC)**

Version 1.0
Valid from
July 12, 2019

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Version History:

Version 1.0 (Effective July 12, 2019)

The methodology document covers the newly-launched ICE® FactSet® Global NextGen Communications Index™ (ICEFSNC).

1. Index summary

Factsheet	
Full Name	ICE® FactSet® Global NextGen Communications Index™
Index Tickers	Price Return (USD): ICEFSNC Gross Total Return (USD): ICEFSNCT Net Total Return (USD): ICEFSNCN
Index Description	The ICE® FactSet® Global NextGen Communications Index™ is a rules-based equity benchmark designed to track the performance of globally listed companies involved in next generation wireless communications technologies and services. Index compositions and corporate actions, including Rebalance information, can be accessed from ICE Data Services at https://www.theice.com/market-data/indices/equity-indices/products .
Eligible Stocks	Common stocks, ADRs, or GDRs of selected companies involved in next generation communications technologies and services that are listed for trading and electronically quoted on a major stock market that is accessible by foreign investors.
Number of Constituents	Variable (Minimum: 30; Maximum: 50)
Weighting	Modified float-adjusted, market capitalization weighted
Index Reconstitutions	The Index is reconstituted annually after the close of the fourth Friday in March each year (“Reconstitution Date”). If the Reconstitution Date is a holiday, it will occur on the next Index Business Day.
Index Rebalances	Index constituent weights are rebalanced semi-annually after the close of the fourth Friday in March and September each year (“Rebalance Date”). If the Rebalance Date is a holiday, it will occur on the next Index Business Day.
Calculation Frequency	Price and Total Return: Every 15 seconds between 19:45 (T-1) & 19:00 (T) ET
Base Date	March 25, 2016
Base Level	1000.00
Historic Data Available Since	March 25, 2016
Bloomberg Code	ICEFSNC <INDEX> / ICEFSNCT <INDEX> / ICEFSNCN <INDEX>
Reuters Code	.ICEFSNC / .ICEFSNCT / .ICEFSNCN
Launch Date	July 12, 2019
Website	https://www.theice.com/market-data/indices

2. Governance

Index Sponsor & Administrator

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

The ICE® FactSet® Global NextGen Communications 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 rule book 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 next generation communications technologies and services 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 ICE® FactSet® Global NextGen Communications Index™ is a rules-based equity benchmark designed to track the performance of globally listed companies involved in the next generation communications technologies and services value chain, including wireless communications equipment, wireless infrastructure services, and telecommunication providers.

The ICE® FactSet® Global NextGen Communications Index™ is compiled utilizing RBICS (Reverse Business Industry Classification System) classifications and FactSet Fundamentals 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 19:45 ET, which is around the general time that a number of Asian 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 19:45 ET (T-1) until 19:00 ET (T) on those days specified as Index Business Days. Index Business Days will be classified as days on which at least one of the current constituents' primary listing exchange is 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 and ICE Data Services at 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 third Friday of the relevant month. For example, for the Reconstitution effective for market open on March 30, 2020, the announcement would occur after the close on March 16, 2020.

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 third 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 third Friday of the relevant month and can be accessed from ICE Data Services at 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. 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 next generation communications technologies and services 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 fourth Friday in March each year ("Reconstitution Date"). Index constituent weights are rebalanced semi-annually after the close of the fourth Friday in March and September 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 second Friday in March and September ("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 listed for trading and electronically quoted on a major stock market that is accessible by foreign investors in one of the following countries:

Eligible Countries		
Australia	Indonesia	Poland
Austria	Ireland	Portugal
Belgium	Israel	Spain
Canada	Italy	Sweden
Denmark	Japan	Switzerland
Finland	Malaysia	Taiwan
France	Mexico	United Kingdom
Germany	Netherlands	United States
Hong Kong	Norway	

In the event that two or more listings for a given company qualify for inclusion based upon the exchange country and liquidity requirements, the primary listing exchange will be included in the universe.

- 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 \$375 million or greater, and a three-month ADTV of \$1.5 million or greater on the Reference Date.

- Select companies that are classified as focus, having derived 50% or more revenues from one of the following (30) next generation communications technologies and services related RBICS Level 6 industries. The list of (30) industries are further broken down into (2) communications value chain categories: (i) Communication Equipment & Infrastructure Services; and (ii) Communication Telco Providers. This list of industries will be evaluated periodically and may change over time as the market evolves.

Table 1. Eligible RBICS Level 6 Industries	
Category 1: Communication Equipment & Infrastructure Services	Category 2: Communication Telco Providers
Cable Interconnect Components	Asia (Excluding China) Wireless Services
Colocation and Data Center Services	Australia and New Zealand Wireless Services
General Carrier Edge (Access) Equipment	Central and Eastern Europe Wireless Services
General Communications Equipment	Central and South America Wireless Services
Industrial and Warehouse Equity REITs*	China Wireless Services
Multi-Type Equity REITs*	General United States Telecommunications Services***
Optoelectronics Electronic Components	Middle East and Africa Wireless Services
Other Communications Semiconductors	Multiregion Wireless Services
Other Test and Measurement Equipment	Multi-Type United States Wireless Services
Other Wide Area Networking (WAN) Equipment	Pan-America Wireless Services
Programmable Logic Device Semiconductors	Pan-Asia/Pacific Wireless Services
RF Analog and Mixed Signal Semiconductors	Pan-Europe Wireless Services
Smart Phone Manufacturing**	United States Wireless Business Data Services
Test and Measurement Communications Equipment	United States Wireless Voice Services
Wireless Infrastructure Services	Western Europe Wireless Services

*Only includes companies whose primary business (defined as accounting for 50% or more of their revenues) is focused on operating wireless towers or colocation data centers based on their Business Description profiles as compiled by FactSet Fundamentals.

**Companies deriving < 50% of their revenues from this industry but accounting for a 20% or greater market share of the overall Smart Phone Manufacturing market are also included.

***Exclude companies whose primary business (defined as accounting for 50% or more of their revenues) is in operating cable and/or broadband networks.

4. Rank the qualifying securities by float-adjusted market capitalization, from largest to smallest. The top (40) ranked companies in Category 1 and top ranked (10) companies in Category 2 are eligible for index inclusion. The total number of index constituents shall not exceed 50 or be less than 30, in which case the next ranked companies would be included to reach the minimum count in the Index.

6.3 Weighting methodology and periodical update of weighting

Constituent weights are determined by dividing their individual float-adjusted market capitalization by the total float-adjusted market capitalization of all constituents. Furthermore, Category 1 and Category 2 constituents will be allocated 80% and 20% of the aggregate index weight, respectively. Individual security weights are capped at 8%, with excess weight redistributed proportionally among remaining securities whose weights are less than 8% within the respective Category. If this redistribution leads to additional security weights exceeding 8%, the aforementioned redistribution process is repeated iteratively until no security weight exceeds 8%.

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

At semi-annual Index Rebalances and Annual Reconstitutions, constituent weights are adjusted to reflect their respective float-adjusted market capitalizations and Category classifications based upon company data as of the Reference Date, subject to the diversification limits set forth above. 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

fourth 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.

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 next generation communications technologies and services 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. Additional limitations may be described in the methodology document under the Special Considerations for Index Backtest section, if applicable.

Intercontinental Exchange, Inc., the ultimate parent company of IDI, keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of Intercontinental Exchange, Inc. may have information that is not available to other business units. IDI has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process. There is no obligation on IDI to disclose information held by it in relation to any Index to other parties.

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