

# The S-Network Large/Mid-Cap Sharpe Ratio Index (SNSHRP)

## Official Rule Book

### I. General Description

SNSHRP is a portfolio of stocks derived from the S-Network US Equity Large/Mid-Cap 1000 Index (SN1000). The SNSHRP methodology selects the five stocks in each of ten of the GICS sectors that make up the SN1000 which have the highest Sharpe Ratio as of the last business day of the second month of each calendar quarter. The fifty stocks that are selected for inclusion in the portfolio are equally weighted.

The SN1000 is a benchmark index for the large/mid-cap component of the US stock market. The SN1000 provides the universe of stocks for SNSHRP.

SNSHRP divides into ten GICS sectors (“the sectors”):

- **Energy,**
- **Materials,**
- **Industrials,**
- **Consumer Discretionary,**
- **Consumer Staples,**
- **Health Care**
- **Financials,**
- **Information Technology,**
- **Communication Services, and**
- **Utilities.**

The selection criteria for the SN1000 include requirements for primary exchange listing, minimum market capitalization, minimum average daily trading volume, and other factors. All constituents of SNSHRP must be constituents of the SN1000. SNSHRP excludes REITs.

Individual securities to be included in SNSHRP are selected based on a ranking system within each sector that selects the five stocks in each sector with the highest Sharpe Ratio as of the last business day of the second month of each calendar quarter. Sharpe Ratio is computed based on the 3-month average of a stock’s outperformance of the risk-free rate divided by the 3-month daily standard deviation of the stock’s price returns. (Dividends are not included).

All stocks selected for inclusion in SNSHRP are then equally weighted.

### II. The Index Committee

The S-Network SNSHRP Index Committee (“The Committee”) will be composed of not less than three members. The Committee Chairman will have extensive experience with and expertise in

US equity markets. The other members will have experience in financial markets, indexes and/or financial products.

The Committee will be responsible for overseeing the activities of the calculation agent and approving all changes to the index related to its quarterly reconstitutions and rebalancings. The primary function of the Index Committee is to make sure the index rules are implemented correctly and in full.

The Committee meets quarterly, either in person or via teleconference, to discuss index issues and organize the quarterly reconstitutions and rebalancings.

The composition of the Committee may from time to time be changed to reflect changes in market conditions.

All members of the index committee and their advisors shall comply with the S-Network Global Indexes code of conduct and ethics with respect to the disclosure and use of material nonpublic information.

### **III. Index Value at Inception**

The S-Network Large/Mid-Cap Sharpe Ratio Index (Ticker: SNSHRP) had a value at inception of 1000, on its inception date of December 31, 1999. SNSHRP is calculated on both a Price Only and on a Total Return basis.

### **IV. SNSHRP Eligibility Criteria and Weighting.**

Only stocks that both will be constituents of the SN1000 as of the effective date of the quarterly reconstitution of SNSHRP and have a share price of no more than 500 USD as of the snapshot date are eligible for inclusion in the index. The five stocks in each of the ten GICS sectors with the highest Sharpe Ratio as of the last trading day of month prior to the rebalancing month (the “snapshot date”) are selected for inclusion.

Any constituent subject to pending transaction and trading at net present value to the transaction will be removed from the Index at the next rebalancing.

GICS sector classifications are updated quarterly as of the last trading day of the month prior to the rebalancing month.

All stocks selected for inclusion in SNSHRP are equally weighted. Share weights will be based on prices as of the close of trading on the second Friday of the rebalancing month (“The Record Date”).

If there are fewer than 5 eligible securities represented in any GICS sector as of the snapshot date the index will include only those securities which qualify.

All constituents are equally weighted as of the record date.

Prior to the June 2019 reconstitution, SNSHRP used the S&P 500 Index as its universe.

## **V. Rules for Reconstitutions, Rebalances, and Index Changes**

The SNSHRP Index is calculated by S-Network Global Indexes. (“The Calculation Agent”). The Calculation Agent is also responsible for index maintenance and price dissemination. The calculation, maintenance and dissemination rules are as follows:

**Index Changes.** The SNSHRP Index is rebalanced quarterly at the close of trading on the third Friday of the last month of each calendar quarter. Index changes take place at each rebalancing date (the third Friday of the last month of each calendar quarter), except in the event of certain corporate actions, such as mergers, acquisitions, and delistings. In such cases, the change is applied on the effective date of the action, unless otherwise determined by the Index Committee. Share increases and decreases are reflected on the rebalancing date. Whenever possible, changes will be announced at least two business days prior to their implementation.

**Index Reconstitutions.** The SNSHRP Index is reconstituted quarterly on the third Friday of last month of each calendar quarter.

**Additions and Deletions.** Additions and Deletions to the Indexes are made 1) at the close of trading on the quarterly reconstitution date (third Friday of the last month of each calendar quarter) and 2) in the event of the deletion of a constituent stock due to a corporate action. When a stock is deleted, a replacement will be added on the next rebalancing date.

Deletions are made at any time, in the event a stock is liquidated, de-listed, files for bankruptcy, is acquired, or merges with another stock. Upon deletion, the weight of the removed stock is reallocated proportionately to the remaining constituents. Additions are made only upon the effective date of the quarterly rebalancing.

If a stock is deleted from the SN1000, the stock will be deleted from SNSHRP on the date of the next rebalancing.

If a stock is deleted from the SN1000 after the snapshot date for additions and deletions pursuant to quarterly rebalancings but before the rebalancing date, the stock will be deleted from the index and a replacement stock will be chosen.

## **VI. Roles of Parties in the Quarterly Reconstitution.**

- i) The Calculation Agent will screen the constituents of the SN1000 to identify the five stocks in each sector with the highest Sharpe ratio based on closing prices and values as of the close of trading the snapshot date.

- ii) On the first Friday of reconstitution month, the Calculation Agent shall provide the Committee, or its designee, with a list of constituents for the SNSHRP. If the first Friday is the first of the month the calculation agent will provide the committee, or its designee, with a list of constituents for the SNSHRP on the following Monday.
- iii) The Committee shall approve or reject the changes and notify the calculation agent of its decisions not later than the Tuesday following the first Friday of reconstitution month.
- iv) Not later than the Wednesday following the first Friday of reconstitution month, the Index Committee or its designee will issue a press release announcing additions and deletions to SNSHRP. The press release will be posted on the SNSHRP web site.
- v) The Calculation Agent will provide final share weights to the Committee or its designee on the Monday following the second Friday of reconstitution month. Share weights will be based on prices as of the close of trading on the second Friday of reconstitution month (“the record date”).
- vi) The SNSHRP Index Committee or its designee will approve the final share weights prior to the close of US markets on the next business day and will distribute this information to the Calculation Agent and all SNSHRP licensees.
- vii) The effective date of the reconstitution will be on the close of business on the third Friday of reconstitution month. The Calculation Agent will post all final rebalancing data and information on its FTP server prior to the open on the next business day following the reconstitution date.
- viii) SNSHRP will post all reconstitution data on its website prior to the open on the next business day following the reconstitution date.

## **VII. Ongoing Maintenance**

- i) In addition to the scheduled quarterly reviews, SNSHRP is reviewed on an ongoing basis. Changes in index composition and related weight adjustments are necessary whenever there are extraordinary events such as liquidations, conversions, delistings, bankruptcies, mergers or takeovers involving index components. In these cases, each event will be taken into account on its effective date. Whenever possible, the changes in the index’s components will be announced at least two business days prior to their implementation date.
- ii) **Changes of Eligible Securities.** In the event that a component no longer meets the eligibility requirements described in Section IV herein, it will be removed from the index on the effective date of the next rebalancing.
- iii) **Changes of Sector Classification.** Stocks are eligible for inclusion in the SNSHRP based on their inclusion in an applicable sector. Mergers, takeovers, and spin-offs, may cause a stock to lose its eligibility. In such a circumstance, the stock will be

- deleted from the index on the effective date of the next rebalancing. A stock's classification may also require an immediate change as the result of a special event such as a merger, takeover or spin-off.
- iv) **Mergers.** If two index constituents merge, their component positions will be replaced by the surviving stock immediately, and the weight of the removed stock will be redistributed to all the remaining constituents on a proportional basis. If an index constituent merges with a non-component stock, it will be removed from the index and its weight will be redistributed to all the remaining constituents on a proportional basis.
  - v) **Takeovers.** If an index component is taken over by another component stock, the former will be removed from the index immediately upon completion of the takeover and the weight of the removed stock will be reallocated proportionately to the remaining constituents in the index. If an index component is taken over by a non-component stock, it will be removed from the index and its weight will be redistributed to all the remaining constituents on a proportional basis.
  - vi) **Spin-Offs.** In the event of a spin-off, the spun-off company's stock will be sold on the effective date of the spin-off and the proceeds will be reinvested directly back into the parent organization.
  - vii) **Conversions:** If an index component is converted to a non-eligible financial security, it will be deleted from the index 5 business days following the effective date of the conversion and the weight of the removed stock will be reallocated proportionately to the remaining constituents in the index, unless otherwise determined by the Index Committee.
  - viii) **Share Offerings, Tenders and Purchases.** Share Offerings, Tenders and Purchases will not be implemented.
  - ix) **Removal of Stocks Due to Delisting, Bankruptcy or Extreme Financial Distress.** If an index constituent is de-listed by its primary market, or is in bankruptcy proceedings, it will be removed from the index.
    - \* If an index component is de-listed by its primary market due to failure to meet financial or regulatory requirements, it will be removed from the index and its weight will be reallocated to the remaining constituents in the index.
    - \* If an index component enters bankruptcy proceedings, it will be removed from the index and will remain ineligible for re-inclusion until it has emerged from bankruptcy. However, the Committee may, following a review of the bankrupt company and the issues involved in the filing, decide to keep the stock in the index.
    - \* The Committee may, at its discretion, remove a stock it has determined to be in extreme financial distress from the SNSHRP, if the Committee deems the removal

necessary to protect the integrity of the index and the interests of investors in products linked to the index.

x) Pricing of Stocks in Extreme Financial Distress for Index Maintenance.

\* When a stock is suspended from trading due to financial distress and subsequently de-listed by its primary market prior to resumption of trading, the Calculation Agent will use the best-available alternate pricing source to determine the value at which the stock should be removed from the index.

\* If the stock's primary market price is no longer available due to its suspension or de-listing, a current price from another exchange, such as a regional or electronic marketplace, may be used. In the absence of those prices in the case of U.S. securities, OTC Bulletin Board, OTC Equity (non-OTCBB stocks), and Pink Sheet traded prices could be applied in that order.

\* If neither a traded price nor a bid/asked range is available, the Committee will evaluate the status of the suspended stock. The Committee may consult with managers of portfolios linked to indexes in which the stock is a constituent in determining the value of the stock. If the Committee concludes that the security has become worthless or is likely to remain too illiquid to be traded, it will be removed from the index at .01 local currency of the stock.

### VIII. Calculation and Adjustments

i) Input Data Sources

\* Real-time stock prices are provided by Reuters. The latest trading price is used for index calculation.

\* The number of shares is determined separately for each class of stock. This information is obtained from regulatory filings and a variety of data vendors. The data also may be sourced from the constituent stocks themselves.

\* Corporate actions are sourced from public news services, regulatory filings and data vendors. The constituent stocks themselves may be used as an additional source.

ii) Index Formula. The index is calculated using a Laspeyres formula. This formula is used for the calculation of the return index and the price index. The only difference is that the divisor  $D_t$  is different for the two indexes (return index and price index).

The index is computed as follows:

$$Index_t = \frac{\sum_{i=1}^n (p_{it} * q_{it})}{(C_t \sum_{i=1}^n (p_{i0} * q_{i0}))} * Base\ Index\ Value = \frac{M_t}{B_t} * Base\ Index\ Value$$

The above mentioned formula can be simplified as:  $Index_t = \frac{M_t}{D_t}$

Where:

- $D_t = \frac{B_t}{\text{base index value}} = \text{divisor at time (t)}$
- n = the number of stocks in the index
- $p_{i0}$  = the closing price of stock i at the base date
- $q_{i0}$  = the number of shares of stock i at the base date
- $p_{it}$  = the price of stock i at time (t)
- $q_{it}$  = the number of shares of stock i at time (t)
- $C_t$  = the adjustment factor for the base date market capitalization
- t = the time the index is computed
- $M_t$  = market capitalization of the index at time (t)
- $B_t$  = adjusted base date market capitalization of the index at time (t)

Dividend payments are not taken into account in the price indexes, whereas dividend payments are reinvested in the index constituents of the total return index on a proportional basis. The adjustment protects the indexes from the effects of changes in index composition and the impact of corporate actions. See the “Adjustments for Corporate Actions” subsection below for details.

- iii) Divisor Adjustments. Corporate actions affect the share capital of component stocks and therefore trigger increases or decreases in the index. To avoid distortion, the divisor of the index is adjusted accordingly.
- iv) Changes in the index’s market capitalization due to changes in the composition (additions, deletions or replacements), weighting (following quarterly reviews, corporate actions (mergers, or special cash or stock distributions of other stocks) result in a divisor change to maintain the index’s continuity. By adjusting the divisor, the index value retains its continuity before and after the event. For rights offerings, the Calculation Agent will price the rights during the subscription period, not before or after. Alternatively, the Calculation Agent may start pricing the rights after the ex-date and before the subscription period, under the condition that the rights are priced daily.

\* Formulae for Divisor Adjustment. The following formulae will be used for divisor adjustments. (Note: No divisor adjustments are necessary for stock splits, since

market capitalization does not change and the share number and share price are adjusted prior to the opening of trading on the split's ex-date.)

$$D_{t+1} = D_t * \left( \frac{\sum(p_{it} * q_{it}) \mp \Delta MC_{t+1}}{\sum(p_{it} * q_{it})} \right)$$

Where:

$D_t$  = divisor at time (t)

$D_{t+1}$  = divisor at time (t+1)

$p_{it}$  = stock price of stock i at time (t)

$q_{it}$  = number of shares of stock i at time (t)

$\Delta MC_{t+1}$  = add new components' market capitalization and adjusted market capitalization (calculated with adjusted closing prices and shares effective at time t+1 and/or minus market capitalization of stocks to be deleted (calculated with closing prices and shares at time t)

Note: If the current trading price of an issue is unavailable, the previous trading session's closing price is used. However, if the issue is affected by any corporate action that requires an adjustment, then the adjusted price is used.

\* Adjustments for Corporate Actions. An index divisor may decrease (▼) or increase (▲) or keep constant (■) when corporate actions occur for a component stock. Assuming shareholders receive "B" new shares for every "A" share held for the following corporate actions:

▼ A) CASH DIVIDEND (applied for return index only)

adjusted price = closing price - dividend announced by the stock

■ B) SPECIAL CASH DIVIDEND\*\*

adjusted price per share = closing price – special dividend amount

adjusted shares = closing index market capitalization / adjusted price per share

**\*\*Before June 24, 2019:**

▼ B) SPECIAL CASH DIVIDEND (applied for price and return index)

adjusted price = closing price - dividend announced by the stock

■ C) SPIN-OFF

adjusted price per share = closing price per share – spinoff value

adjusted shares = closing index market capitalization / adjusted price per share

■ D) SPLIT AND REVERSE SPLIT

adjusted price = closing price \* A / B new number of shares = old number of shares \* B / A

■ E) RIGHTS OFFERING

adjusted price = (closing price \* A + subscription price \* B) / (A + B) new number of shares = old number of shares \* (A + B) / A

■ F) STOCK DIVIDEND

adjusted price = closing price \* A / (A + B) new number of shares = old number of shares \* (A + B) / A

▼ G) STOCK DIVIDEND OF A DIFFERENT STOCK SECURITY

adjusted price =(closing price \* A - price of the different stock security \* B)/A

▲ H) COMBINATION STOCK DISTRIBUTION (DIVIDEND OR SPLIT) AND RIGHTS OFFERING

Shareholders receive B new shares from the distribution and C new shares from the rights offering for every A shares held:

\* If rights are applicable after stock distribution (one action applicable to other). adjusted price = [closing price \* A + subscription price \* C \* (1 + B / A)] / [(A + B) \* (1 + C / A)] new number of shares = old number of shares \* [(A + B) \* (1 + C / A)] / A

\* If stock distribution is applicable after rights (one action applicable to other). adjusted price = [closing price \* A + subscription price \* C] / [(A + C) \* (1 + B / A)] new number of shares = old number of shares \* [(A + C) \* (1 + B / A)]

▲ I) STOCK DISTRIBUTION AND RIGHTS (NEITHER ACTION IS APPLICABLE TO THE OTHER) adjusted price = [closing price \* A + subscription price \* C] / [A + B + C] new number of shares = old number of shares \* [A + B + C]

**IX. Calculation of SNSHRP Index Values**

The SNSHRP is calculated by S-Net Global Indexes. ("The Calculation Agent"). The Calculation Agent is also responsible for index maintenance and price dissemination.

- i) The Calculation Agent will distribute end of day index values to vendors via the FTP.
- ii) The Indexes will be calculated and disseminated in USD.
- iii) The Calculation Agent will distribute price-only and total return index values following the close of trading on US stock markets on each business day.

**X. Dissemination**

Index values are disseminated in US dollars via the NYSE GIF using the following tickers:

Price Index	SNSHRP
Total Return Index	SNSHRPT

Values for the price only index (SNSHRP) are distributed once daily, at approximately 6:30PM (EST), Monday through Friday, excluding New York Stock Exchange holidays. Values for the total return index (SNSHRPT) are distributed once daily, at approximately 6:30PM (ET), Monday through Friday, excluding exchange holidays.

## **XI. Data Correction Policy**

To maintain a high standard of data integrity, a series of procedures have been implemented to ensure accuracy, timeliness and consistency. Input prices are monitored using a variety of computerized range-check warning systems for both ticker-plant and real-time index systems. Fault tolerant methods are employed in the collection of market and corporate action data. Various verification and audit tasks are performed to ensure the quality of the real-time data feeds and related market data. While every effort is taken to ensure the accuracy of the information used for the index calculation, an index error may occur due to incorrect or missing data, including trading prices, exchange rates, shares outstanding and corporate actions, due to operational errors or other reasons.

- i) Intraday Corrections. Reasonable efforts are employed to prevent erroneous data from affecting the indexes. Corrections will be made for bad prices and incorrect or missing corporate actions as soon as possible after detection.
- ii) Since the indexes are calculated on a real-time basis, an incorrect index value tick will not be fixed retroactively. Incorrect daily high/low index values will be corrected as soon as practicable.
- iii) Index-Related Data and Divisor Corrections. Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of an index, if discovered within five days of its occurrence, will always be fixed on the day it is discovered to pre-vent an error from being carried forward.
- iv) If a divisor error is discovered more than five days after occurrence, the adjustment will depend upon how significant the error is, how far back the error occurred and the feasibility of performing the adjustment.

## **XII. APPENDIX REVIEW SCHEDULE**

Constituent Changes  
Frequency: Quarterly

Effective date: The close of trading on the third Friday of the last month of each calendar quarter  
Advance notice: Approximately 2 weeks

Quarterly Rebalance

Frequency: Quarterly

Effective date: The close of trading on the 3rd Friday of the last month of each calendar quarter

Advance notice: At least 1 week

News Notification\*

Frequency: As needed

Effective date: As announced

Advance notice: At least two business days whenever possible

\* Includes events such as de-listings, mergers, bankruptcies and other extraordinary events.

\* Based on available news.