

# National Stock Exchange of India Limited

## Circular

| Department: INVESTIGATION DEPARTMENT |                     |
|--------------------------------------|---------------------|
| Download Ref No: NSE/INVG/69255      | Date: July 22, 2025 |
| Circular Ref. No: 495/2025           |                     |

All Market Participants,

### **Sub: Safer participation of Retail investors in Algorithmic trading – Detailed Operational Modalities**

This is with reference to SEBI Circular Ref. no. SEBI/HO/MIRSD/MIRSD-PoD/P/2025/0000013 dated February 04, 2025 and NSE circular Ref. no. NSE/INVG/66524 dated February 05, 2025 regarding safer participation of retail investors in Algorithmic trading. The Exchange, vide circular number NSE/INVG/67858 dated May 05, 2025 issued the implementation standards in accordance with para 7 (a) of the aforementioned SEBI Circular.

As required in the above-mentioned SEBI circular, the detailed operational modalities for participation of Retail investors in Algorithmic trading along with the documentation required are provided in Annexure I.

As required in the above-mentioned SEBI circular, the implementation date of the above framework is 1st August 2025.

**For and on behalf of**

**National Stock Exchange of India Limited**

**Manish Deo**

**Associate Vice President**

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## **Annexure I**

### **Detailed operational modalities for empanelment of Algo Providers and registration of Retail Algo**

#### **1. Background:**

- 1.1.** SEBI, vide circular no. SEBI/HO/MIRSD/MIRSD-PoD/P/CIR/2025/0000013 dated February 4, 2025 issued a circular '*Safer participation of retail investors in Algorithmic trading*. Exchange vide circular NSE/INVG/67858 dated May 05, 2025 has issued "Implementation Standards for safer participation of retail investors in Algorithmic trading".
- 1.2.** Definition of an algo order - As per the above SEBI circular "Algo orders" are orders generated using automated execution logic.
- 1.3.** The above circular requires Exchanges to issue necessary guidelines regarding the following -
  - 1.3.1.** Clause 5 III (a) - any Algo Provider, providing the facility to place algo orders with Brokers through API, shall require to be empanelled with Exchanges in a manner as stipulated by Exchanges (Refer Para 6 of this document for empanelment procedure)
  - 1.3.2.** Clause 5 III (b) Exchanges shall specify the empanelment criteria for the algo providers. (Refer Annexure 2 of Para 6 for empanelment criteria)
  - 1.3.3.** Clause 5 IV (a) (i) Exchanges to put in place a comprehensive Standard Operating Procedure (SOP) for testing of algos (refer para 12 of this document)
  - 1.3.4.** Clause 5 IV (a) (iv) defining the roles and responsibilities of brokers (refer para 10 of this document)
  - 1.3.5.** Clause 5 IV (a) (v) defining the roles, criteria and process of empanelment of algo providers (Process of empanelment provided in Para 6 of this document and empanelment criteria provided in Annexure 2 of Para 6)
  - 1.3.6.** Clause 5 IV (c) The detailed operational modalities, covering the following aspects, shall be issued by stock exchanges, in consultation with SEBI,
    - 1.3.6.1.** Roles and responsibilities of the brokers including risk management system of brokers for orders through API, roles of algo providers along with the criteria and process of empanelment of algo providers. (refer Para 11, Para 10, Para 6 and Annexure 2 Para 6 of this document)
    - 1.3.6.2.** Registration process for algos and the circumstances in which a reapproval (re-registration) shall be required. (refer Para 8 and Para 9 of this document)
    - 1.3.6.3.** Measures to enhance the confidentiality of retail algo strategies including confidentiality clauses, non-disclosure agreements, encrypted submissions etc. (refer Para 13 of this document)
    - 1.3.6.4.** Data flow between the algo provider, broker and the Exchange, while ensuring that the broker remains responsible for

compliance with the outsourcing guidelines specified by SEBI from time to time. (refer Para 14 of this document)

- 1.3.6.5. Clause 5 IV (d) Exchanges shall specify the turnaround time (TAT) to register certain types of algos (eg. Execution algos) on a fast track basis while registering other types of algos on a normal basis. For both these scenarios, TAT shall be decided by the stock exchanges and mentioned in their SOP, disclosed on their website. (refer Para 5 of this document)

## 2. Revised Framework for identification of the following

- 2.1.** Revised Identification for first 12-digits of NNF ID – Provisions with respect to the NNF ID as defined in Exchange circular NSE/MSD/67753 dated April 29, 2025 is revised as under to incorporate identification ALGO orders from client Direct API.

| Sl No | Platform / type of order  | Algo allowed Y/N | NNF id (12 digit)         | 13 <sup>th</sup> Digit Validations  |
|-------|---|------------------|---------------------------|---|
| 1     | CTCL (should be only operated by Dealer of TM or Direct system of TM – for square off orders)   | Y                | First 6 digits PIN number | 13 <sup>th</sup> digit can be “0”, “1”, “2”, “3” or “4” which will determine ALGO or NON ALGO |
| 2     | IBT (should be with front end of the TM which captures only manual order entry of all order attributes such as date, order qty, order limit price , symbol, contract etc.)  | N                | 111111111111              | 13 <sup>th</sup> digit should always be NON ALGO  |
| 3     | STWT (should be with front end of the TM which captures only manual order entry of all order attributes such as date, order qty, order limit price , symbol, contract etc.) | N                | 333333333333              | 13 <sup>th</sup> digit should always be NON ALGO  |
| 4     | DMA (only specific category of clients as specified by Exchange from time to time)  | Y                | 222222222222              | 13 <sup>th</sup> digit can be “0”, “1”, “2”, “3” or “4” which will determine ALGO or NON ALGO |
| 5     | Client Direct API (Facility provided by TM to Clients to send order messages through API, other than the above options)   | Y                | 444444444444              | 13 <sup>th</sup> digit should always be ALGO i.e. “0”, “2” or “4”.                            |

- 2.2.** Revised Identification for 13th digit of NNF ID

| Value of 13 <sup>th</sup> Digit | Description                       | Applicable NNF id (12 digit)   |
|---------------------------------|-----------------------------------|--|
| “0”                             | Algorithmic Order                 | First 6 digits PIN number, 222222222222 & 444444444444               |
| “1”                             | Non-Algorithmic Order             | First 6 digits PIN number, 111111111111, 222222222222 & 333333333333 |
| “2”                             | Algorithmic Order using SOR       | First 6 digits PIN number, 222222222222 & 444444444444               |
| “3”                             | Non - Algorithmic Order using SOR | First 6 digits PIN number, 111111111111, 222222222222 & 333333333333 |
| “4”                             | Inter Exchange Algorithmic Orders | First 6 digits PIN number, 222222222222 & 444444444444               |
| “5”                             | RMS Square off orders             | First 6 digits PIN number  |
| “6”                             | After market Orders               | First 6 digits PIN number  |

| Value of 13 <sup>th</sup> Digit | Description   | Applicable NNF id (12 digit)                              |
|---------------------------------|---------------|---|
| "7"                             | Basket orders | First 6 digits PIN number or 222222222222 or 444444444444 |
| "8"                             | Batch upload  | First 6 digits PIN number or 222222222222 or 444444444444 |

- 2.3.** The existing categorization for ALGO registered with CTCL id and DMA will remain unchanged.
- 2.4.** The new categorization for client direct API "444444444444" will be as under. ALGO ID registration with NNF id "IBT – "111111111111" or STWT – "333333333333" will NOT be allowed. In cases of IBT and STWT the front end should be only with TMs own front end which captures manual order entry of all order attributes such as date, order qty, order limit price , symbol, contract etc.
- 2.4.1.** 1st level category (Front end):
- 2.4.1.1. Client Direct API (Facility provided by TM to Clients to send order messages through API, other than the above options)
- 2.4.2.** 2nd level category (Developer):
- 2.4.2.1. Vendor Algo
- 2.4.2.2. Trading Member (In-House) Algo
- 2.4.2.3. Tech Savvy retail investor (beyond OPS threshold)
- 2.4.2.4. Tech Savvy retail investor (within OPS threshold)
- 2.4.3.** 3rd level category (User):
- 2.4.3.1. Dealer of a TM
- 2.4.3.2. Client
- 2.4.4.** 4th level category (Logical grouping):
- 2.4.4.1. White Box
- 2.4.4.2. Black Box
- 2.4.5.** 5th level category (Strategy):
- 2.4.5.1. White Box
- 2.4.5.1.1. Execution
- 2.4.5.1.2. TWAP
- 2.4.5.1.3. VWAP
- 2.4.5.2. Black Box
- 2.4.5.2.1. Arbitrage
- 2.4.5.2.2. Alpha seeking
- 2.4.5.2.3. High frequency
- 2.4.5.2.4. Scalping
- 2.4.5.2.5. Others
- 2.5.** For Tech savvy client category, TM needs to disclose - PAN and UCC as reported by member in UCI portal to the Exchange.
- 2.6.** Member shall apply for registration of Algos giving details of the 5-level category disclosure to the Exchange.
- 2.7.** In all cases where there is a Black Box Algo, the ALGO provider needs to be registered as RA with SEBI.
- 2.8.** As per Implementation standards published (NSE Circular NSE/INVG/67858 dated May 05, 2025 – Section B3), all orders received via API from clients / Algo Provider's platform shall be considered as Algo and will be required to be tagged as defined in this document.

3. **Definition of ALGO Provider:** As per definition provided in the SEBI/HO/MIRSD/MIRSD-PoD/P/CIR/2025/0000013 (Para 5 I a), 'Algo Provider' can be any fintech / vendor providing algo facility through the usage of API. For the purpose of provision of algo trading through Client Direct API – “444444444444”, brokers shall be the principal while algo provider shall act as its agent, while using the API provided by the broker. It is further emphasized that for all other categories, as per extant byelaws/rules/regulations, TM is responsible for all orders messages sent to Exchange through their terminals.
4. **Chronology to be followed for registration of an Algo:**
  - 4.1. Empanelment of Vendor
    - 4.1.1. Already Empanelled Vendor of Exchange – Empanelment not required
    - 4.1.2. New ALGO provider empanelment (including “ALGO provider”) - Process to be followed is similar as mentioned in Exchange circular NSE/MSD/67753 dated April 29, 2025 (Section 12.2. : Empanelment of Vendors for providing software used in trading and risk management). Further details are in subsequent paragraphs.
    - 4.1.3. Trading Member (In-house) – Empanelment not required
  - 4.2. Registration of ALGO product
  - 4.3. Application and Registration of ALGO strategy through a Trading Member and grant of ALGO ID by Exchange
5. **Turnaround Time (TAT) -** As per the SEBI circular, “Exchanges shall specify the turnaround time (TAT) to register certain types of algos (e.g. Execution algos) on a fast-track basis while registering other types of algos on a normal basis. For both these scenarios, TAT shall be decided by the stock exchanges and mentioned in their SOP, disclosed on their website”.
  - 5.1. For empanelment of “Algo Provider” with the Exchange – The proposed TAT for empanelment of Algo providers with the Exchange is T + 30 working days from receipt of complete application as per formats communicated from time to time and communicate the status as Empanelled / Rejected with appropriate reasons to the applicant.
  - 5.2. For processing of application for registration of Algo’s from “Algo Provider” / Empanelled Vendors / Trading Members
    - 5.2.1. Each activity has a defined TAT as per the criticality and operational functions. Accordingly, TAT is defined as T+10 working days for Algo registration requests being submitted to Exchange.
    - 5.2.2. In case of Execution algos, a faster TAT of T+7 working days will be applicable.
    - 5.2.3. TAT shall mean the maximum timeline within which Exchange officials shall take expected course of action upon the receipt of complete application/documents/request and communicate the status as registered / Rejected with appropriate reason to the applicant.
    - 5.2.4. The TAT may be reviewed at a later date based on experience gained on execution of process or feedback from internal / external stake holders.

## **6. Empanelment process of Algo providers**

- 6.1.** As stipulated in the SEBI circular, The Algo Provider should get empanelled with the Exchange. Accordingly, the Algo provider shall be required to follow the below empanelment process:
- 6.2.** Document submission for Empanelment – The Algo Provider shall make an application to the Exchange for empanelment as per specified format and shall execute an undertaking in favour of the Exchange.
  - 6.2.1.** Submission of Empanelment Undertaking as per format provided in **Annexure 1**
  - 6.2.2.** Criteria for empanelment as per details provided in **Annexure 2**
  - 6.2.3.** Submission of Empanelment application as per format provided in **Annexure 3**
  - 6.2.4.** 2 years of Securities Market experience for the Proprietor/Directors (Any 1)/Partners (Any 1)
  - 6.2.5.** Registration for various algorithmic trading software to be provided by vendor is a separate process. Accordingly, Algo Providers are required to apply separately for registration of the same.
- 6.3.** Allotment of vendor (including ALGO provider) code by the Exchange to the Algo Providers
  - 6.3.1.** Upon processing of empanelment application, if all the documents / requirements are found to be satisfactory, the Algo Provider shall be registered, and a unique Vendor code shall be allotted.
  - 6.3.2.** Circular shall be issued to market announcing the empanelment as a “Algo Provider”
  - 6.3.3.** Algo Provider list shall be updated on Exchange website
- 6.4.** Independent Commercial Arrangement
  - 6.4.1.** The empanelled Algo Provider will enter into an independent commercial arrangement with the members and shall execute relevant contracts with them.
  - 6.4.2.** The Exchange shall not be liable for any payment due to the Algo Provider for provision of services to the Members/Clients or for the provision, non-provision, failure or glitch in the provision of services to the Members/Clients by the Algo Provider.
  - 6.4.3.** Termination: Any breach of the terms and conditions of this empanelment, including its annexures, will entitle the Exchange to terminate the empanelment immediately.

## **7. Product registration**

### **7.1. Algo Provider -**

- 7.1.1.** As part of Product registration - Receipt and processing of UI and Algo product registration requests of Algo Provider by Exchange
- 7.1.2.** User Interface registration
  - 7.1.2.1.** Product name with frontend writeup including password policy, version, segments, exe / browser based etc.
  - 7.1.2.2.** URL (details of portal) via which service will be provided to investors
  - 7.1.2.3.** Writeup on the basic Risk Management System (RMS) implemented
  - 7.1.2.4.** Auditor certificate applicable for Algo Provider as per **Annexure 4**
- 7.1.3.** Registration of Algo product:
  - 7.1.3.1.** Type of Algo to be provided by Algo Provider – Whitebox or Blackbox

7.1.3.1.1. In case of Whitebox, following documents to be submitted by Algo Provider

7.1.3.1.1.1. Writeup on the basic Risk Management System (RMS) implemented

7.1.3.1.1.2. Auditor certificate applicable for Algo Provider as per **Annexure 4**

7.1.3.1.2. In case of Blackbox algo, following documents to be submitted by Algo Provider

7.1.3.1.2.1. Registration certificate as a Research Analyst in name of the Algo Provider

7.1.3.1.2.2. Writeup on the basic Risk Management System (RMS) implemented

7.1.3.1.2.3. Auditor certificate applicable for Algo Provider as per **Annexure 4**

7.1.3.1.2.4. Undertaking that detailed report of trades generated by the Blackbox algo has been maintained and will be reproduced to the Exchange / regulator as and when requested.

7.1.3.1.2.5. Undertaking that they shall renew their RA certificate prior to expiry and communicate the updated certificate to the Exchange else the Algo registered under “Blackbox” category shall be considered as “Deemed Surrendered” by the Exchange upon expiry.

7.1.3.1.2.6. Undertaking that in case there are any changes made to the Algo (as mentioned in Section 9 of this document) post registration, there will be a requirement of re-registration of the Algo.

## **7.2. Existing empanelled vendors**

**7.2.1.** Existing empanelled vendors desirous of extending their API to Members of the Exchange shall be required to submit registration request with following documents:

7.2.1.1. Product name with writeup including the following features and functionality

7.2.1.1.1. Password policy and identification of user,

7.2.1.1.2. version,

7.2.1.1.3. segments supported,

7.2.1.1.4. market data dissemination

7.2.1.1.5. orders and trade management features supported via API including logs / history,

7.2.1.1.6. reports for limits, margins, holdings, positions etc.

7.2.1.1.7. any other features

Non-Confidential

7.2.1.2. Writeup on the basic Risk Management System (RMS) implemented

7.2.1.3. Writeup of maintenance of audit trail / transaction logs

7.2.1.4. Auditor certificate applicable for Algo Trading as per **Annexure 5**

**7.2.2. Registration of Algo product:**

7.2.2.1. Type of Algo to be provided by the empanelled vendor – Whitebox or Blackbox

7.2.2.1.1. In case of Whitebox, following documents to be submitted by the empanelled vendor

7.2.2.1.1.1. Writeup on the basic Risk Management System (RMS) implemented

7.2.2.1.1.2. Auditor certificate applicable for empanelled vendor as per **Annexure 5**

7.2.2.1.2. In case of Blackbox algo, following documents to be submitted by empanelled vendor

7.2.2.1.2.1. Registration certificate as a Research Analyst in name of the empanelled vendor

7.2.2.1.2.2. Writeup on the basic Risk Management System (RMS) implemented

7.2.2.1.2.3. Auditor certificate applicable for empanelled vendor as per **Annexure 5**

7.2.2.1.2.4. Undertaking that detailed report of trades generated by the blackbox algo has been maintained and will be reproduced to the Exchange / regulator as and when requested.

7.2.2.1.2.5. Undertaking that they shall renew their RA certificate prior to expiry and communicate the updated certificate to the Exchange else the Algo registered under “Blackbox” category shall be considered as “Deemed Surrendered” by the Exchange upon expiry.

7.2.2.1.2.6. Undertaking that in case there are any changes made to the Algo (as mentioned in Section 9 of this document) post registration, there will be a requirement of re-registration of the Algo.

**7.3. Trading Members –**

**7.3.1. Algo product and “API” product registration process**

7.3.1.1. Brokers desirous of providing API services to Investors shall be required to submit request for “API” registration for products developed “Inhouse” / Empanelled Vendor. This would identify that the member is using an API interface for providing the facility to client. Existing Members already exposing API to its client shall also be required to register with the Exchange.



7.3.1.2. For market data provisioned to Registered Broking Clients via APIs, members will need to ensure that the following controls are implemented:

7.3.1.2.1. Clients being provided real-time or near-real-time data as permitted will use the same strictly for their trading purposes and shall not be permitted to or redistribute the data as per terms and conditions being covered in the broking agreement.

7.3.1.3. Following documents shall be submitted by the Trading Member –

7.3.1.3.1.1. Undertaking

7.3.1.3.1.2. Detailed RMS document/product write-up and Algo Audit certificate

7.3.1.3.1.3. System Audit for API

**7.3.2.** Registration of Algo product:

7.3.2.1. Type of Algo to be provided by the Trading Member – Whitebox or Blackbox

7.3.2.1.1. In case of Whitebox, following documents to be submitted by the Trading Member

7.3.2.1.1.1. Writeup on the basic Risk Management System (RMS) implemented

7.3.2.1.1.2. Auditor certificate applicable as per **Annexure 7**

7.3.2.1.2. In case of Blackbox algo, following documents to be submitted by Trading Member

7.3.2.1.2.1. Registration certificate as a Research Analyst in name of the Trading Member

7.3.2.1.2.2. Writeup on the basic Risk Management System (RMS) implemented

7.3.2.1.2.3. Auditor certificate applicable as per **Annexure 7**

7.3.2.1.2.4. Undertaking that detailed report of trades generated by the Blackbox algo has been maintained and will be reproduced to the Exchange / regulator as and when requested.

7.3.2.1.2.5. Undertaking that they shall renew their RA certificate prior to expiry and communicate the updated certificate to the Exchange else the Algo registered under “Blackbox” category shall be considered as “Deemed Surrendered” by the Exchange upon expiry.

Undertaking that in case there are any changes made to the Algo (as mentioned in para 9 of this document) post registration, there will be a requirement of re-registration of the Algo.

## **8. Algo strategy Registration:**

- 8.1.** For all Algo strategy registrations, whether the Algo strategy is developed by Trading Member (In-house), Algo strategy developed by Algo Providers or already empanelled vendors, the Trading Member has to submit a registration application with the Exchange.
- 8.2.** Following changes would be incorporated in algo registration application form for Members:
- 8.2.1.** Algo registration is applicable only through CTCL and DMA. In order to implement SEBI circular for providing access to algos to retail investors, members will be allowed to provide algorithmic trading to clients through a new category "Client Direct API" and members will need to register each algo with the Exchange with the only exception of "Tech Savvy retail investor (within OPS threshold)". Accordingly, following multilayered categories i.e. shall be included in the application form. The following categorization is only applicable for "Client Direct API".
- 8.2.1.1.1. 1<sup>st</sup> level category (Front end):
    - 8.2.1.1.1.1. Client Direct API (Clients other than DMA clients without TM front end with all order attributes like Direct API) / Member Frontend for Retail Algo (IBT and STWT)
  - 8.2.1.1.2. 2<sup>nd</sup> level category (Developer):
    - 8.2.1.1.2.1. Vendor Algo
    - 8.2.1.1.2.2. In-House Algo
    - 8.2.1.1.2.3. Tech Savvy retail investor (beyond OPS threshold)
    - 8.2.1.1.2.4. Tech Savvy retail investor (within OPS threshold)
  - 8.2.1.1.3. 3<sup>rd</sup> level category (User):
    - 8.2.1.1.3.1. Dealer of a TM
    - 8.2.1.1.3.2. Client
  - 8.2.1.1.4. 4<sup>th</sup> level category (Logical grouping):
    - 8.2.1.1.4.1. White Box
    - 8.2.1.1.4.2. Black Box
  - 8.2.1.1.5. 5<sup>th</sup> level category (Strategy):
  - 8.2.1.1.6. In case of White Box
    - 8.2.1.1.6.1. Execution
    - 8.2.1.1.6.2. TWAP
    - 8.2.1.1.6.3. VWAP
  - 8.2.1.1.7. Black Box
    - 8.2.1.1.7.1. Arbitrage
    - 8.2.1.1.7.2. Alpha seeking
    - 8.2.1.1.7.3. High frequency
    - 8.2.1.1.7.4. Scalping
    - 8.2.1.1.7.5. Others
- 8.2.1.2. Member shall apply for registration of Algos giving details of the 5-level category disclosure to the Exchange.

8.2.1.3. For Tech savvy client category, TM needs to disclose in the application form - PAN and UCC as reported by member in UCI portal to the Exchange.

8.2.1.4. For members applying registration of client Algos on “Client Direct API” category, following fields shall be introduced and made mandatory to be submitted by the member as per respective product:

8.2.1.4.1. “API” set up Name using which the algorithm orders shall be released to the Exchange

8.2.1.4.2. “API” Version number using which the algorithm orders shall be released to the Exchange

8.2.1.4.3. “API” Registration Date using which the algorithm orders shall be released to the Exchange.

**8.2.2. Allotment of Algo ID to Trading Member** - Upon processing of the algo strategy registration application, if all the above documents / requirements are found to be satisfactory, unique Algo Id will be allotted for the registered algo strategy as per TAT defined above. TM will be provided algo ID for the application and it will also be tagged with a specific algo Provider. If the Algo provider wants to get the same algo ID operationalized through another TM, the application of that TM should contain the algo ID already provided by the Exchange.

**8.2.3.** For orders being sent beyond 10 OPS, members are required to register the algos developed by clients as per process detailed above, for which unique algo id shall be assigned by the Exchange.

**8.2.4.** As per implementation guidelines, point A.4. Trading Members need to ensure that non-registered algos (within 10 orders per second i.e. OPS) developed by clients are run only through one of the predefined API keys. In such case members shall be required to send the value in the Algo ID field as “99999” in the order message and 13th digit of the 15 digit NNF ID as “0”.

**8.2.5. Algo strategy Registration documents to be submitted by Trading Member**

8.2.5.1. For Empanelled vendor / Algo Provider:

8.2.5.1.1. Auditor report as per format attached as **Annexure 6** (applicable for empanelled vendor)

8.2.5.1.2. Auditor certificate as per format attached as **Annexure 7**

8.2.5.1.3. Vendor confirmation letter as per format attached as **Annexure 8**

8.2.5.2. For Algo provided by Trading Member, developed In-House:

8.2.5.2.1. Auditor report as per format attached as **Annexure 6**

8.2.5.2.2. Auditor certificate as per format attached as **Annexure 7**

8.2.5.2.3. Strategy writeup

8.2.5.2.4. RMS writeup

8.2.5.3. Algo developed by client:

8.2.5.3.1. Auditor certificate as per format attached as **Annexure 7**

8.2.5.3.2. Strategy writeup

8.2.5.3.3. RMS writeup

Note: Members desirous of providing Services through Algo Provider or API shall be required to fulfil the BMC requirement as applicable for Category 4 – “All trading members/ Brokers with Algo”

- 9. Circumstances in which re-registration shall be required by the Trading Members for Algo's by Algo Provider:**
- 9.1.** In case of any change in logic governing the algos
  - 9.2.** Any change in OMS and/or RMS pertaining to the algos (Applicable only if it results in a code change in the algo)
  - 9.3.** Addition of segment/ Version change
  - 9.4.** Exchange mandated changes
  - 9.5.** Implementation of new SEBI circular
  - 9.6.** Changes in policy of login and/ or password management.
  - 9.7.** Changes in URL for providing algos by the Algo Provider
  - 9.8.** Change in API provided by the Member
  - 9.9.** Note: No modification shall be allowed for registered Blackbox algos. Algo Provider shall be required to apply for fresh registration in case of any change in logic governing the algo's
- 10. Operational Specifications for providing API /Algo Provider facility including roles and responsibilities of brokers:**
- 10.1.** Trading members providing API /Algo Provider facility for routing client orders shall not be allowed to cross trades of their clients with each other. All orders must be offered to the market for matching.
  - 10.2.** All API orders shall be routed to the exchange trading system through the members' trading system. The broker's server routing API /Algo Provider orders to the exchange trading system shall be located in India.
  - 10.3.** The trading member should ensure sound audit trail for all API /Algo Provider orders and trades and be able to provide identification of actual user-id for all such orders and trades. The audit trail data should be available for at least 5 years.
  - 10.4.** The trading member should ensure that their API's /Algo Provider's do not permit clients to place orders for order types and/or contract/securities which are restricted by the Exchange / SEBI from time to time .
  - 10.5.** Trading member shall be required to have systems and procedures in place to detect / identify and categorise all orders as algo orders.
  - 10.6.** Trading member shall have suitable system in place to identify orders being sent by the client are below or above the defined threshold and appropriately tag the algo id in the orders being sent to the Exchange.
  - 10.7.** The API /Algo Provider system shall have sufficient security features including password protection for the user ID, automatic expiry of passwords at the end of a reasonable duration, and re-initialisation of access on entering fresh passwords. System shall authenticate client access to API /Algo Provider through two factor authentication.
  - 10.8.** Trading members shall be required to put in place system, processes and policies to ensure that open API are not permitted, and access is being provided only through a unique client specific API key and static IP whitelisted by the broker to ensure identification and traceability the end user i.e. investor.
  - 10.9.** Trading members shall be required to have OAuth (Open Authentication) / SEBI mandated 2FA based authentication only or any authentication mechanism allowed / communicated by the Exchange / SEBI from time to time. All other authentication mechanisms shall be discontinued.

- 10.10.** Trading members should maintain all activities/ alerts log with audit trail facility. The API /Algo Provider Server should have internally generated unique numbering for all such client order/trades.
- 10.11.** A systems audit of the API /Algo Provider systems and software shall be periodically carried out by the broker as may be specified by the exchange and certificate in this regard shall be submitted to the exchange.
- 10.12.** The trading members should provide for adequate systems and procedures to handle the API orders.
- 10.13.** The broker shall be fully responsible and liable for all orders emanating through their API /Algo Provider systems. It shall be the responsibility of the broker to ensure that only clients who fulfil the eligibility criteria are permitted to use the API /Algo Provider facility.
- 10.14.** The “Terms and Conditions” shall be provided to the client for availing the API /Algo Provider facility as per format attached **Annexure 9**.
- 10.15.** Members may take such other measures and implement such other safeguards as they deem fit to ensure security and integrity of transactions conducted via API /Algo Provider facility.
- 10.16.** Trading members, while submitting the application for API /Algo Provider with the Exchange are required to confirm compliance of the above.
- 10.17.** Trading Member to ensure that they have systems and procedures in place to detect/identify and categorize all orders above the specified threshold as algo orders.
- 10.18.** Trading Member shall not permit open APIs and allow access only through a unique vendor client specific API key and static IP whitelisted by the broker to ensure identification and traceability of the algo provider and the end user (i.e. investor)
- 10.19.** Trading Member to authenticate access to API through two factor authentication
- 10.20.** Trading Member to deal with only empanelled algo providers only and handle all related complaints, as such algo providers are agents of such broker.
- 10.21.** The facility of algo trading shall be provided by the broker only after obtaining requisite permission of the stock exchange for each algo
- 10.22.** All algo orders shall be tagged with a unique identifier provided by the Exchange in order to establish audit trail and the broker shall seek approval from the Exchange for any modification or change to the approved algos.
- 10.23.** Brokers shall be solely responsible for handling investor grievances related to algo trading and the monitoring of APIs for prohibited activities.
- 10.24.** Before onboarding an empanelled algo provider/vendor on its platform, the broker shall also do the necessary due diligence.
- 10.25.** Algo providers and brokers may share the subscription charges and brokerage collected from the client. However, prominent and complete disclosures of all the charges shall be made to the client. The broker shall also ensure that such arrangements do not result in any conflict of interest.

## **11. Risk Management:**

- 11.1.** Following RMS checks are compulsory

| Sr. No.                          | Pre Trade Risk Control | Requirement |
|----------------------------------|------------------------|-------------|
| <b>At individual order level</b> |                        |             |

| Sr. No.                | Pre Trade Risk Control                          | Requirement   |
|------------------------|---|---|
| 1                      | Price Check                                     | Algo orders shall not be released in breach of the price bands /dummy filters as defined by the Exchange in respective segments.  |
| 2                      | Quantity Check                                  | Algo Orders shall not be released in breach of order quantity limit per order as defined by the Exchange in respective segments. Quantity Limit check is also applicable for Spread Order being placed.   |
| 3.                     | Order Value Check                               | Algo Orders should not exceed the limit specified by the Exchange. The order value check should be within the ranges as prescribed by Exchange circulars. Order value check is also applicable for Spread Order being placed.   |
| 4.                     | Trade Price Protection Check                    | Algo Orders shall not be released in breach of the bad trade price for the security in respective segment. System Auditor shall refer relevant NSE circulars with respect to “Pre-trade risk controls – market price protection” and “Pre-trade risk controls – limit price protection”. System auditor shall verify these checks which are designed to reduce excessive order rejections due to LPP and normally order placement is within the ranges as prescribed by Exchange circulars. |
| 5.                     | Market price protection Check                   | The pre-set percentage of LTP shall necessarily be accompanied by a limit price. Members are required to adhere to the Market Price Protection check, by not placing any algorithmic orders on the Exchange as a market order. System Auditor shall refer relevant Trade risk controls - auditor shall verify these checks which are designed to ensure that order placement is within the ranges as prescribed by Exchange circulars.  |
| <b>At client level</b> |   |   |
| 6                      | Cumulative Open Order Value Check               | Algo orders shall not be released in breach of Individual client level cumulative open order value check at the client level. Open order value for a client is the total value of its unexecuted orders released from trading members system. System shall not permit the user to set “Unlimited values”  |
| 7.                     | Automated Execution Check                       | Algo shall account for all executed, unexecuted, and unconfirmed orders placed by the system before releasing further orders. Algo system shall have pre-defined parameters for an automatic stoppage in event of Algo execution leading to a loop or a runaway situation.  |
| 8.                     | Net Position Vs. available margin               | Algo orders shall not be released in breach of Net positions as against the available margin defined by the trading member for the client.  |
| 9.                     | RBI Violation checks for FII Restricted stocks. | Algo orders shall not be released for security restricted by RBI from time to time.   |
| 10.                    | MWPL violation check                            | Algo orders shall not be released in breach of market wide position limit as defined by the Exchange for the security in respective segments.   |

| Sr. No. | Pre Trade Risk Control   | Requirement  |
|---------|--|--|
| 11.     | Position Limit Check   | Algo orders shall not be released in breach of position limit as defined by the trading member for the client. (In case of commodity derivatives, the net positions of the client / member are not in violation of the position limits prescribed for the respective commodity.) |
| 12.     | Trading Limit Check  | Algo orders shall not be released in breach of overall trading limits as defined by the trading member for the client.   |
| 13.     | Exposure Limit check at individual client level and at overall level for all clients | Algo orders shall not be released in breach of exposure limit as defined by the trading member for the client.   |
| 14.     | Turnover Limit Check   | Orders shall not be released in breach of turnover limit as defined by the trading member for the client.  |
| 15      | Security Wise Limit Check  | Orders shall not be released in breach of security-wise value limit as defined by the trading member for individual security.  |
| 16      | Efficient Price Discovery and Fair Play Check  | The algorithm strategy/ies are conducive to efficient price discovery and fair play and shall not take liquidity away from the market (applicable to algorithm strategy/ies in the Commodity Derivative segment).  |

- 11.2.** The broker shall ensure that trading limits/ exposure limits/ position limits are set for all API clients based on risk assessment, and available margins of the client. The broker system shall have appropriate authority levels to ensure that the limits can be set up only by persons authorized by the risk / compliance manager.
- 11.3.** The broker shall ensure that all orders received from API are routed through electronic/automated risk management systems of the broker to carry out appropriate validations of all risk parameters including Quantity Limits, Price Range Checks, Order Value etc. before the orders are released to the Exchange.
- 11.4.** All orders received from API shall be subjected to the following limits:
- 11.4.1.** Order quantity / order value limit in terms of price and quantity specified for the client.
  - 11.4.2.** All the position limits which are specified in the derivatives segment as applicable.
  - 11.4.3.** The net position of the client / member are not in violation of the position limits prescribed for the respective commodity
  - 11.4.4.** Net position that can be outstanding so as to fully cover the risk emanating from the trades with the available margins of the specific client.
  - 11.4.5.** The broker may provide for additional risk management parameters as they may consider appropriate.
  - 11.4.6.** Market Orders and IOC orders shall not be allowed to place Algo orders in Commodity Segment.



- 11.4.7.** System shall have provision to restrict Algo order placement in Mini and Micro contract as defined by the Exchange from time to time as per the Broad Algo guidelines applicable for Commodity Segment.

**12. Testing of software**

- 12.1.** All registered retail algos are required to participate in mock/simulation on a monthly basis.
- 12.2.** Trading Members can avail Simulated Environment as detailed in NSE consolidated circular NSE/MSD/67731 Dated April 28, 2025.

**13. Confidentiality of retail algo strategies including confidentiality clauses, non-disclosure agreements, encrypted submissions etc.**

- 13.1.** Retail algo strategies may be of following types

- 13.1.1.** Algo is developed by trading Member, Algo Provider or Vendor

- 13.1.1.1. As per SEBI circular Algos shall be categorized into two categories:

- 13.1.1.2. Algos where logic is disclosed and replicable i.e. Execution Algos or White box Algos;

- 13.1.1.3. Algos where the logic is not known to the user and is not replicable, i.e. Black box Algos –

- 13.1.2.** For Blackbox Algos, the algo provider shall:

- 13.1.2.1. Register as a Research Analyst and maintain a detailed research report for each such algo and confirm to the exchanges that such report has been maintained.

- 13.1.2.2. In case of any change in the logic governing the algo, register such algo as a fresh algo and maintain a detailed research report.

- 13.1.3.** Algo is developed by tech-savvy client – The entire responsibility of the logic of the strategy and RMS requirement as per SEBI/NSE circular will be ensured by the Tech Savvy client.

- 13.1.4.** In all the above cases, a detailed agreement with respect to confidentiality clauses, non-disclosure agreements, encrypted submissions etc. needs to be entered between the concerned parties i.e. Broker, Vendor and Tech Savvy client wherever applicable.

**14.** Data flow between the algo provider, broker and the Exchange – TM shall be responsible for the orders placed through any algo or otherwise. NSE circular NSE/INVG/67858 dated May 05, 2025 (Annexure to the circular Para (I) (h)) states that all the strategies shall be run on the brokers servers. The order messages shall be originated from brokers server. Broker will be responsible to ensure that the data of clients do not flow beyond their servers so that confidentiality can be ensured. Brokers shall thus be responsible for the outsourcing guidelines specified by SEBI from time to time.

**15.** All the provisions of system audit, cyber security, VAPT and inspection related requirements would be applicable to all algos including Retail algos.

**16.** Additional documents related to the registration process are as follows:

- 16.1.** Auditor selections norms – criteria for selection of system auditors

- 16.2.** Change description – reason / description for change in the software

- 16.3.** Checklist – For registration process

- 16.4.** Common Undertaking for NNF facility





- 16.5.** No change letter – Supporting document for modification request
- 16.6.** Vendor confirmation letter – to be provided by Algo Provider

## **Annexure 1 - UNDERTAKING**

**To be executed on Rs. 1000/- stamp paper / applicable stamp duty of the state (whichever is higher), duly Notarized on all pages, signed, stamped & sealed by Authorized Signatory on all pages**

I / We \_\_\_\_\_, an individual / a firm registered under the Indian Partnership Act, 1932 / a Limited Liability Partnership registered under Limited Liability Partnership Act 2008/a Company / Body Corporate incorporated under the Companies Act of 2013/ \_\_\_\_\_ Act, \_\_\_\_, and residing at / having our registered office at/ having place of business at \_\_\_\_\_ (including its successors, assigns and legal representatives) give this UNDERTAKING on this \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_ IN FAVOUR of National Stock Exchange of India Ltd., a company incorporated under the Companies Act of 1956, with its registered office at Exchange Plaza, an Bandra-Kurla Complex, Bandra (East), Mumbai 400 051 and is a recognized stock exchange under section 4 of the Security Contract Regulation Act ,1956 (hereinafter referred to as 'NSEIL'/'Exchange' which expression shall unless repugnant to the context include its successors, assigns and legal representatives).

### **WHEREAS**

- a) I/We (hereinafter also referred to as "Algo Providers") am/are desirous of making available decision support tools/algorithms ("Algorithm/Tools") to trading members of NSEIL (hereinafter "Trading Members") for the purpose of algorithmic trading and has/have approached NSEIL.
- b) NSEIL may, at its sole discretion, empanel such Algo Providers to provide Trading Members with Algorithm/Tools purposed for algorithmic trading ("Product") based on the application received from them and fulfilment of criteria stipulated by NSEIL from time to time. This includes the vendor providing an undertaking in favour of NSEIL in the prescribed format and agreeing to abide by and be bound by the various terms and conditions prescribed by NSEIL from time to time.
- c) I / We have developed the Product for Trading Members to enable them to avail of the algorithmic trading facilities with the Exchange, and in this regard, I/ We, have submitted our application to NSEIL for empanelment along with an undertaking as herein below:

**NOW THEREFORE IN CONSIDERATION OF NSEIL having agreed to identify / identified me / us as "Algo Provider" and my/our Product as "Registered Product" for the aforesaid purposes, I / we hereby IRREVOCABLY AND UNCONDITIONALLY AGREE, ACCEPT and UNDERTAKE to abide by and be bound by the following terms and conditions:**

1. I/We hereby, declare that the information provided by me/ us in the application form submitted to NSEIL for registration as an Algo Provider or for the registration of the Product (hereinafter as “Registered Product”) are correct, complete, true in all aspects. I/We hereby acknowledge and understand that my/our registration as Algo Provider and/or registration of our Product as Registered Product by NSEIL is only basis the documentation provided by me to NSEIL and NSEIL shall not held liable for any claim or penalty arising as a result of use or availment of my Product.
2. I/We agree to pay any such license fees/charges/royalties as may be levied by DOT/SEBI/NSEIL or any other regulatory/statutory authorities from time to time.
3. I/We shall ensure that the Product along with Risk Management System complies and shall continue to comply at all time with the requirements laid down by NSEIL and/or SEBI.
4. I/We undertake that our Product adheres to implementation standards formulated by Broker’s Industry Standards Forum, under aegis of stock exchanges and in consultation with SEBI.
5. I/We undertake to ensure that access shall be given only to the authorized individuals, either it being our representatives (“Algo Provider’s Personnel”) or representative of the Trading Member (“Approved Users”) and shall ensure to deploy necessary security, tools, method (including malware protection) to prohibit any unauthorized access to the Product provided.
6. I/We shall install the Product only at the Trading Member’s location only after duly ensuring that all the requirements stipulated by NSEIL in this regard have been complied with by the Trading Member and that the Approved User shall not make the Product available to any other unauthorised person.
7. I/We undertake to give NSEIL prior notification for any changes to be made to the Software and seek fresh registration from NSEIL of the Product as Registered Product.
8. I/We undertake that the Product design shall be compatible with NSEIL’s trading system in order to use only the specified messages given by NSEIL and shall consider all the structures defined by NSEIL from time to time. I/We shall ensure that the Product shall be compatible with basic functionalities as required by NSEIL and to any changes thereof. Further, I/We shall ensure that any customization requirement of the Trading Members shall be in line with NSEIL requirements.
9. I/We undertake that the Product developed by me / us shall be at all times similar to that of the specifications of National Exchange for Automated Trading (NEAT) or any other Exchange provided software including any upgrades stipulated by NSEIL, from time to time. However, I/ we shall ensure that such Product developed by us shall be distinctly identifiable from NEAT or any other Exchange provided software.

10. I/We undertake that controls shall be inbuilt by me/ us to ensure that the orders are matched by the central computer of NSEIL only and there is no scope for orders being matched in my / our / Trading Members own private network.
11. I/We undertake that the following controls shall be inbuilt in the Product by me/us to detect loss of product integrity:
  - a. Data validation routines to detect input errors.
  - b. Backup and recovery procedures.
12. I / We shall ensure that the Product shall have adequate security features and that the Product cannot be made available to any other person other than Approved Users.
13. I / We shall ensure that the Product shall be developed so as to generate the following from the system for the purpose of verification during the inspection:
  - (i) Number of users hooked on to the network.
  - (ii) Number of dealers hooked on to the network including privileges to each dealer.
  - (iii) All the systems logs and audit trails of the dealer and the Trading Member.
  - (iv) Provision for entering complementary dummy orders.
14. I/We undertake that
  - (i) SEBI/NSEIL shall have the right and privilege of auditing and testing the Product at my/our site and the Trading Members site at any point of time without any prior notice. The source code of the Product shall be made available at my/our site for verification and during such audit by SEBI/NSEIL.
  - (ii) I / We shall provide all the necessary support, technical and otherwise, as may be required for SEBI/NSEIL or any other regulatory authority to inspect and test the Product and/or our site.
  - (iii) I / We shall make available prototype and the technical specifications of the Product to NSEIL for testing purposes.
  - (iv) I / We shall be responsible to fix the bugs in the Product if any, found at the time of testing.
15. That I / We shall meet the criteria set to measure the expected level of performance.
16. I/ We agree that the terms for providing the Product and for the payment thereof, shall be as agreed by the Trading Member and myself/us and NSEIL shall not be responsible for any breach, either by the Trading Member or by me/ us, of such terms and conditions agreed therein.
17. I/We shall provide the documentation i.e. training manuals required to operate the Product and use of system outputs as specified by the Trading Member. Further, such

documentation shall include the potential error conditions and recommend action in the event of occurrence of error.

18. I / We undertake to provide user training first when the Product is installed and thereafter whenever a major upgrade is released, or at such other intervals as may be required by Trading Member or stipulated by the Exchange for the following:

(i) Use of Product

(ii) Maintenance of the Product

Further, I / We also undertake that the frequency and calibre of my/our personnel providing the training shall be as specified.

19. I / We shall develop the Product after considering the current and expected increase in workload, to ensure that the desired efficiency can be maintained with future workloads.

20. I / We shall develop the Product and make it compatible to other operating systems, in case of any need to transfer the Product from one piece of hardware to another due to technological changes.

21. I/We am/are fully aware that NSEIL shall not be responsible for development, maintenance, updates, upgrades, error fixes and other support functions.

22. I/We undertake to provide the training and documentation as and when the Product is technically upgraded.

23. I / We undertake to provide such warranty as may be required for the purposes of this Undertaking.

24. I / We undertake to ensure as follows:

(i) That in case of failure or malfunctioning of the Product, I/We shall make such first level trouble shooting and rectification the Product problem to restore the Product in its proper operating condition at no cost to the Trading Member.

(ii) That I / We shall provide services for regular on-site maintenance of the Product in such manner and at such time intervals as specified by the Trading Member. The fees for the same will be the amount mutually agreed upon by the Trading Member and me/us and shall not at any point of time be unreasonable so as to put the Trading Member in hardship. We are also aware that NSEIL shall in no way be responsible for non-fulfilment of either this or any other condition by the Trading Member.

(iii) Shall supply and maintain the Product trading solution to any NSEIL Trading Member at any location in the country, which the Trading Member desires to operate from.

25. I / We undertake to ensure as follows:

- i. For the purpose of provision of algo trading through APIs, trading member shall be the principal while the Algo Provider shall act as its agent, while using the API provided by the trading member.
  - ii. All algo orders originating/flowing through Application Programming Interface (API) extended by Trading Member to Algo Providers, shall be tagged with a unique identifier provided by Stock Exchange.
  - iii. In case, I/We provide the software to tech-savvy retail investors, then, I/we shall get it registered with the Exchange, only if they cross the Specified Order Per Second Threshold.
  - iv. Software so provided shall be permitted to be used by such retail investors for their family (but not for other investors). 'Family' for this purpose would be as defined in SEBI circular SEBI/HO/MIRSD/MIRSD-PoD1/P/CIR/2024/169 dated 3 December 2024.
  - v. Access is allowed only through a unique vendor client specific API key and static IP whitelisted by the Trading Member to ensure identification and traceability of the Algo Provider and the end user (i.e. investor) and the access is not permitted through open APIs;
  - vi. Access to API is authenticated through two factor authentication;
  - vii. Product shall have Open Authentication (OAuth) based authentication only and any other authentication mechanisms as prescribed by NSEIL/SEBI from time to time.
  - viii. For Black Box Algos, i.e. Algos where logic is not known to the user and is not replicable, I/We shall register as a Research Analyst and maintain a detailed research report for each such algo and confirm to NSEIL that such report has been maintained. In case there is any change in the logic governing the algo, then I/We shall register such algo as a fresh algo and maintain a detailed research report for the new algo and confirm to NSEIL that such report has been maintained.
26. I / We confirm that the Product complies with all the requirements stipulated by NSEIL, SEBI and the DOT in this regard and undertake that I/we shall modify the Product, if necessary to ensure continued compliance with the requirements of NSEIL / DOT / SEBI / any other authority as may be issued from time to time.
27. I / We hereby undertake to duly inform NSEIL in case of any cause, resulting in any change to my/our entity, or any change in any of the eligibility criteria based on which my / our Product has been identified as 'Registered Product' for this purposes by NSEIL.
28. I / We hereby undertake to duly inform NSEIL the list of Trading Members who are using my/our Product as and when NSEIL seeks such information within the stipulated time, as communicated by NSEIL.
29. I/We agree and undertake to make any modification/amendment to the Product as required by NSEIL during the continuation of the empanelment.

30. I/We agree that the term “Empanelment at NSEIL” is specifically limited to accessing test market and receiving update from NSEIL regarding the software facility, wherever we display or express our empanelment with NSEIL.
31. I/We agree that “Empanelment at NSEIL” does not guarantee the veracity of the Product or any commercial veracity of any contract or agreement done by us with our clients.
32. I/ we agree that our empanelment at NSEIL does not constitute or imply endorsement, recommendation, or favour by NSEIL, its associate companies or any of its employees or contractors acting on its behalf. Further that, I/We would not position ourselves to the market at large in a manner that is akin to conveying endorsement, recommendation or favour by NSEIL.
33. I / We shall render all possible assistance and co-operation to NSEIL/SEBI by providing access to any kind of information in any form as it may require and I/we hereby undertake to produce such documents, records, accounts, books, data howsoever stored including data stored in magnetic tapes, floppy diskettes, etc. and any other information as may be required by NSEIL/SEBI at its discretion.
34. . I/We hereby acknowledge, accept and understand that NSEIL makes no representations or warranty, express or implied, regarding the advantages, benefits, usefulness, or accuracy of the Product or the advantages accruing from subscribing to it. NSEIL shall not be responsible or liable for the functionality or performance of the Product and does not guarantee any desired results/outcomes. NSEIL shall not be liable for any direct or indirect claims, damages or the like arising from the use, availment, or subscription of such facility by the trading member.
35. I/We agree that the empanelment granted by NSEIL for providing Product does not, in any manner, represent or warrant that the Product shall be free of any error, omission, defects, bugs, shortcoming or limitation of any nature. The Algo Provider and Trading Member are solely responsible for ensuring that the Product does not result in any market disruption, manipulation, aberrations or affect the integrity of the market or sanctity of price discovery mechanism. Furthermore, I/We and Trading Member shall be solely liable for all/any dysfunctional, erroneous or disorderly functioning of the Product and for any technical glitch in the same and the consequences arising therefrom. I/we and Trading Member shall at all times ensure that the Product is not used for any purpose that is contrary to applicable Circulars, Byelaws, Rules and Regulations of the SEBI and/or Exchange.
36. I/We agree that in event of any dispute arising between me/us and Trading Member/s, NSEIL shall not be responsible for the resolution of such dispute. Furthermore, NSEIL shall not be liable for any breach of terms and conditions, commercial agreement or other agreements mutually agreed upon between I/we and trading member.
37. I/We agree that NSEIL only facilitates access for Trading Members to the test market to test the Product that is developed by me/us. The grant of such access by NSEIL shall not be used by me/us to communicate to any Trading Members that NSEIL assumes any responsibility for the Product developed by us.

38. I / We shall indemnify and keep NSEIL harmless and defend against all claims, demands, damages, liabilities, losses and expenses (including the reasonable cost of investigating and reasonable counsel fees) suffered by NSEIL due to my / our non-compliance, breach or contravention of any provisions of this Undertaking or due to bugs or malfunctioning of the Product provided by us to the Trading Members of NSEIL or any claims, damages or the like arising from the use, availment, or subscription of such facility by the trading member. This indemnification shall be limited to the average annual revenue generated by us in the last three (3) completed and audited financial years from the suite of products registered by NSEIL.
39. The limits on liability as stated above do not apply to: (a) Fraud, fraudulent misrepresentation, wilful misconduct, or conduct that demonstrates a reckless disregard for the rights of others; (b) Negligence causing death or personal injury; (c) any third Party claim related to Intellectual Property Rights.
40. For the purpose of this Undertaking "**Intellectual Property Rights**" means:
- i. Copyrights, patents, know-how, trade secret, database rights and rights in trademarks and designs (whether registered or unregistered),
  - ii. Applications for registration, and the right to apply for registration and extensions and renewals for any of the same, and
  - iii. All other intellectual property rights and equivalent or similar forms of protection existing anywhere in the world including any future rights that may be recognized.
41. If any obligation is cast unto NSEIL by any court of competent jurisdiction to pay or deposit any interim amount pending final disposal of any matter pertaining to the above mentioned adverse actions, claims or demands, I/ We shall promptly (without any delay or demur) pay such interim amount to NSEIL, provided it does not exceed the average annual revenue generated by us in the last three (3) completed and audited financial years from the suite of products registered by NSEIL. In the event of any higher amount being ordered to be paid or deposited, then the same would be mutually discussed and appropriate amount agreed upon for payment to NSEIL.
42. I/We agree that no forbearance, delay or indulgence by NSEIL in enforcing the provisions of this Undertaking shall prejudice or restrict the rights of NSEIL nor shall any waiver of its rights operate as a waiver of any subsequent breach and no rights, powers, remedies herein conferred upon or reserved for NSEIL is exclusive of any other right, power or remedy available to NSEIL and each right, power or remedy shall be cumulative.
43. I/We undertake that any declaration or other notice to be given by me/us to NSEIL shall be sent by registered letter or telex/cable or facsimile transmission to the address first mentioned above.
44. I/We shall not advertise or publish any brochure, pamphlet, booklet, notice, or promotional material mentioning NSEIL or NEAT without the written consent of NSEIL.



45. I/We shall submit that I/We shall ensure that the empanelment fee payable to NSEIL is timely paid to NSEIL.
46. I/We shall submit such details as required by NSEIL including the details regarding the list of Trading Members of NSEIL to whom I/we have provided the license to use the Product and number of license provided to the Trading Members of NSEIL. The details shall be submitted by me / us on a periodical basis.
47. I/We shall execute, sign, subscribe to such other documents, papers, agreement, covenants, bonds, and/or undertakings as may be prescribed or required by NSEIL from time to time.
48. I/We shall not (a) Provide advice or recommendations related to securities unless registered with or expressly permitted by SEBI and (b) Make any claims about returns or performance related to securities unless expressly permitted by SEBI. A breach of this clause will allow NSEIL to terminate my/our empanelment immediately.
49. I/We agree that NSEIL has the right to withdraw my / our identification as “Algo Provider” or identification of my/our Product ‘Registered Product’ for any segment without giving any reason.
50. I/We undertake that any agreement entered into between Trading Members and Algo Providers shall be separate and independent of this Undertaking and I/We shall ensure that NSEIL shall not be liable for any claim arising out of such agreement entered into between Trading Members and Algo Providers.
51. I/We undertake that there is no conflict of interest with the business of NSEIL. I / We shall ensure continued compliance with this requirement. We also undertake that our group companies including holding or subsidiary companies are not engaged in a business which gives rise to conflict of interest with the business of NSEIL. I/We shall immediately inform NSEIL in case a conflict of interest arises in the future and in such an event, NSEIL may take such action as it may deem fit including withdrawal of identification of my/our Product.
52. In the event that the Undersigned wishes to dis-empanel itself, it shall provide NSEIL with at least 90 days’ prior notice. The Undersigned agrees to extend full cooperation and support to the trading member(s) to ensure a smooth transition, including but not limited to assisting with the porting of services, data and any necessary technical or operational handover.
53. The Undersigned agrees and undertakes that NSEIL shall not be liable for any direct or indirect loss, damage, costs, claims and expenses whatsoever caused or contributed by any event of force majeure. For the purposes of this Clause, "Force Majeure" means and includes wars, insurrections, revolution, fires, floods, epidemic, quarantine restrictions, declared general strikes in relevant industries, act of God, act of the Government of India and any concerned State Government and such other acts or events beyond NSEIL's

control and further the above is without prejudice to the rights already accrued to NSEIL due to failure of the Undersigned to perform either in full or in part, its obligations arising prior to the occurrence of events of Force Majeure.

54. I/We affirm to provide all support that is required for the conduct of any audit or investigation or process in respect of our Product, pursuant to any regulatory requirement.
55. I/We affirm to abide by all relevant Laws, Rules and Regulations applicable to me/us during the course of my/our empanelment with NSEIL for providing Algorithm/Tools to Trading Members of NSEIL for the purpose of algorithmic trading.
56. I/We affirm that this Undertaking is governed by the laws of India and any dispute arising from the same will be subject to the jurisdiction of courts of Mumbai.
57. We affirm that in the event of contravention of the above terms of the Undertaking, NSEIL shall have the absolute right to discontinue our empanelment without notice and without assigning any specific reasons whatsoever. We confirm that such decision by NSEIL to discontinue our empanelment shall be final and binding on us.

IN WITNESS WHEREOF this Undertaking is executed by the undersigned on the day, month, year and the place first mentioned above.

SIGNED, SEALED AND DELIVERED BY

\_\_\_\_\_

for and on behalf of \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Before me

In the presence of Witnesses

1. \_\_\_\_\_ (Name & Address) .....

2. \_\_\_\_\_ (Name & Address) .....

### Checklist for Submitting Undertaking

| Sr | Pre Checks  | Tick wherever applicable |
|----|---|--------------------------|
| 1  | Stamp paper is of minimum Rs. 1000 /- **for details refer instruction below   |                          |
| 2  | Stamp paper purchased in name of Algo Provider  |                          |
| 3  | Undertaking is executed in favour of NSEIL  |                          |
| 4  | Date of Stamp paper purchase :  |                          |
| 5  | Date of execution of undertaking mentioned :  |                          |
| 6  | Date of Notarizing to be mentioned :  |                          |
| 7  | Notary stamp on all pages   |                          |
| 8  | Date of entering into the agreement as specified on the first page of the agreement should be on or before the date of notarizing the agreement.                  |                          |
| 9  | Undertaking is executed within validity of stamp paper (Date of execution is on or after the date of, and is within six months of, the stamp paper purchase date) |                          |
| 10 | Clauses of Undertaking are as per format  |                          |
| 11 | Signature on all pages of the Undertaking   |                          |
| a  | For Individual : Only self can sign   |                          |

|    |   |         |
|----|---|---------|
| b  | For Partnership Firm : All Partners OR Authorised Signatory   |         |
| c  | For Corporates : Minimum two directors or a managing director/ Authorised signatories   |         |
| d  | For others : Authorised signatories   |         |
| 12 | Signature of 2 witness on last pages of the Undertaking   |         |
| 13 | Company's stamp is affixed and in presence of persons authorised by the Board Resolution (for Corporates only)                                  |         |
| 14 | If there is any correction in the undertaking , then ensure the persons as authorised by the board resolution have signed across the correction |         |
| 15 | Additional Documents to be collected  | Remarks |
| a  | For Individual : None   | -       |
| b  | For Partnership Firm : Partnership deed or any other documents as advised   |         |
| c  | For Corporates : Copy of board resolution and specimen signature list of authorised signatories   |         |
| d  | For others : any other documents as advised   |         |

\*\* To be executed on Rs. 1000/- stamp paper / applicable stamp duty of the state (whichever is higher), duly Notarized on all pages, signed, stamped & sealed by Authorized Signatory on all pages

## **Annexure 2 - Criteria for Empanelment of “Algo Provider”**

1. The constitution of applicant may be individual / a firm registered under the Indian Partnership Act, 1932 / a Limited Liability Partnership registered under Limited Liability Partnership Act 2008/a Company registered under the Companies Act 2013/1956 or Body Corporate.
2. Parameters for Algo Provider empanelment - background, infrastructure, systems etc.
3. The Algo Provider shall make an application to the Exchange for empanelment as per specified format
4. Details of promoters and their background
5. 2 years of Securities Market experience for the Proprietor/Directors (Any 1)/Partners (Any 1)
6. Criteria related to ISO certification (New) - 27001:2022, CMM (Capability maturity Mode) certification, SOC1 Type 1, Type 2, and SOC2 Type 1, Type 2 requirements added as per SEBI requirements (SEBI circular SEBI/HO/ ITD-1/ITD\_CSC\_EXT/P/CIR/2024/113 dated 20 August 2024)
7. Complete details of infrastructure available (as below) within the organization – Hardware, software, Communication / Networking
8. Type of product being offered – Whitebox / Blackbox / both
9. Proposed Price (indicative per user & site license fee) of providing the Solution to Trading Members
10. Name of the Algo Provider, Registered Address, Telephone No, email ID, Name(s) & Designation of Authorised Signatory, Telephone No. of Authorised Signatory, Correspondence Address
11. Details of contact person with contact number and Email ID
12. Organisation details - Organisational structure, total staff, technical staff, Name and PAN of proprietor/ partners/ directors/promoters and their background, Name and mobile number of contact person, No. of offices across the country
13. Declaration of any cyber / adverse technical incident for the previous 3 years, VAPT reports covering assessment of the Application, APIs, Infrastructure along with Closure report (ATR) from CERT-In empanelled auditor (SEBI circular SEBI/HO/ ITD-1/ITD\_CSC\_EXT/P/CIR/2024/113 dated 20 August 2024)

### **ANNEXURE 3**

#### **APPLICATION FOR EMPANELMENT AS ALGO PROVIDER**

(to be executed on letter head of the Algo Provider)

Application of empanelment for:      Algorithmic Trading (AT),

Segment: CAPITAL MARKET / FUTURES & OPTIONS / CURRENCY DERIVATIVES  
/ COMMODITY DERIVATIVES

(strike-out whatever is not applicable)

#### **1. BASIC DETAILS:**

Name of the Algo Provider:

Registered Address:

Telephone No.:

Email Id.:

Name(s) & Designation of Authorised Signatory:

Telephone No. of Authorised Signatory:

Correspondence Address:

Telephone No.:

Email Id.:

#### **2. ORGANISATION DETAILS**

Organisational structure:      To be enclosed

Total Staff:      Directors

Technical Staff:      Hardware

Software

Support

Others

Name and PAN of proprietor/ partners/ directors/promoters and their background

Name and mobile number of contact person:

No. of offices across the country  
(Complete details to be enclosed)

#### **3. FINANCIAL DETAILS**

Financial Details of applicant/proprietor (CA/CS certified networth certificate to be enclosed)

Details of promoters and their background: To be enclosed

No. of years in the IT Business:

IT Turnover for last five years:  
(Complete details including balance sheets to be enclosed)

Complete details ISO/CMM Certification for IT activity:

#### **4. TECHNICAL DETAILS**

Complete details of infrastructure available (as below) within the organisation: To be enclosed

Hardware:

Software:

Communication / Networking:

Complete details of Projects implemented along with References:

#### **5. SOLUTION DETAILS:**

Complete details of Proposed Solution along with Platforms used etc.:  
(Comprehensive write-up and network diagram to be provided)

Proposed Price (indicative per user & site license fee) of providing the Solution to Trading Members  
(Give details)

We certify that all the information provided in and as part of this application is true and correct to the best of our knowledge. We undertake to ensure continuous compliance with the requirements of SEBI directives, the Exchange, DoT policy and regulations regarding levels of encryption, etc. and SEBI directives and other statutory requirements etc. in this regard, as may be issued from time to time.

Further, we are aware that the list of Algo Providers empanelled with the Exchange including address and contact person details are displayed on the website of the Exchange and accordingly we have no objection to display our details on the website.

Signed sealed and delivered by the Authorised representative of the Algo Provider

Date:

Place:

#### Annexure 4

##### Auditor's Certificate

(To be on the letterhead of the system auditor, all pages to be duly stamped and signed)

|  |                                    |
|--|------------------------------------|
| Algo Provider Code:                                      |                                    |
| Algo Provider Name:                                      |                                    |
| Type of the NNF Product:                                 | AT (Algo Trading) / User Interface |
| Product Category:  | API                                |
| Segment/s:   |                                    |
| Version No:  |                                    |
| Name of the Strategy/ies (For AT):                       |                                    |
| URL through which the Algo is being provided to clients: |                                    |

This is to certify that the above-mentioned product to be used by Clients of the Algo Provider for connecting to the members of the Exchange for the purposes of Algorithmic trading and real-time risk management, is in compliance with the various SEBI/Exchange circulars relevant at the time of the application, more specifically with respect to the following:

- Order Management
- Systems and Network
- Access and Security controls
- Cyber Security & Cyber Resilience framework
- Risk checks listed below

| Sr. No. | Pre Trade Risk Control                                  | Requirement  | Compliance Status<br>(Complied/Non-Complied) |
|---------|---|--|--|
| 1       | Price Check at Individual Order Level                   | Orders shall not be released in breach of the price bands /dummy filters as defined by the Exchange in respective segments.<br><br>Applicable for Segments: CM / FO / CD / CO  |  |
| 2       | Quantity Limit Check at Individual Order Level          | Orders shall not be released in breach of order quantity limit per order as defined by the Exchange in respective segments. Quantity Limit check is also applicable for Spread Order being placed.<br><br>Applicable for Segments: CM / FO / CD / CO   |  |
| 3       | Order Value Check at Individual Order Level             | Order should not exceed the limit specified by the Exchange. The order value check should be within the ranges as prescribed by Exchange circulars. Order value check is also applicable for Spread Order being placed.<br><br>Applicable for Segments: CM / FO / CD / CO  |  |
| 4       | Market Price Protection Check at Individual Order Level | The pre-set percentage of LTP shall necessarily be accompanied by a limit price. Members are required to adhere to the Market Price Protection check, by not placing any algorithmic orders on the Exchange as a market order. System Auditor shall refer relevant NSE circulars with respect to "Pre-Trade risk controls - Market Price Protection". System auditor shall verify these checks which are designed to ensure that order placement is within the ranges as prescribed by Exchange circulars. |  |



|   |   |  |  |
|---|---|--|--|
|   |   | Applicable for Segments: CM / FO / CD / CO   |  |
| 5 | Automated Execution Check                     | Algo to account for all executed, unexecuted, and unconfirmed orders placed by the system before releasing further orders. Algo system to have pre-defined parameters for an automatic stoppage in event of Algo execution leading to a loop or a runaway situation. |  |
|   |   | Applicable for Segments: CM / FO / CD / CO   |  |
| 6 | Efficient Price Discovery and Fair Play Check | The algorithm strategy/ies are conducive to efficient price discovery and fair play and shall not take liquidity away from the market (applicable to algorithm strategy/ies in the Commodity Derivative segment).  |  |

**Declaration:**

I hereby confirm, Algo Provider has complied with the requirement of Exchange Circular NSE/INSP/53939 dated October 03, 2022, and other circulars issued from time to time on "Display of Brokerage, Statutory & Regulatory Levies to the investors" to prominently display the details of brokerage/charges to be levied for each order to the investor on the "Order placement window/screen" on their trading applications prior to placement of order.

There is no conflict of interest with respect to the Algo Provider being audited and our directors / promoters are not directly or indirectly related to the current directors or promoters of the Algo Provider being audited.

Signature:

(Name of the Auditor & Auditing firm)

CISA / DISA / CISM / CISSP Reg. No:

Date:

Place:

Stamp/Seal:

## Annexure 5

### Auditor's Certificate

(To be on the letterhead of the system auditor, all pages to be duly stamped and signed)

|   |                                    |
|---|------------------------------------|
| EV Code:                                  |                                    |
| EV Name:                                  |                                    |
| Type of the NNF Product:                  | AT (Algo Trading) / User Interface |
| Product Category:                         | API                                |
| Segment/s:                                |                                    |
| Version No:                               |                                    |
| Name of the Strategy/ies (in case of AT): |                                    |
| Exe/Browser:                              |                                    |

This is to certify that the above mentioned software to be used by members for connecting to the stock exchanges and for the purposes of trading and real-time risk management, is in compliance with the various SEBI/Exchange circulars relevant at the time of application, more specifically with respect to the following:

- Order Management
- Systems and Network
- Access and Security controls
- Cyber Security & Cyber Resilience framework
- Risk checks listed below

| Sr. No.                          | Pre Trade Risk Control       | Requirement  | Compliance Status (Complied/Non-Complied) |
|----------------------------------|------------------------------|--|---|
| <b>At Individual Order Level</b> |                              |  |   |
| 1                                | Price Check                  | Orders shall not be released in breach of the price bands /dummy filters as defined by the Exchange in respective segments.<br>Applicable for Segments: CM / FO / CD / CO  |   |
| 2                                | Quantity Limit Check         | Orders shall not be released in breach of order quantity limit per order as defined by the Exchange in respective segments. Quantity Limit check is also applicable for Spread Order being placed.<br>Applicable for Segments: CM / FO / CD / CO   |   |
| 3                                | Order Value Check            | Order should not exceed the limit specified by the Exchange. The order value check should be within the ranges as prescribed by Exchange circulars. Order value check is also applicable for Spread Order being placed.<br>Applicable for Segments: CM / FO / CD / CO  |   |
| 4                                | Trade Price Protection Check | Orders shall not be released in breach of the bad trade price for the security in respective segment. System Auditor shall refer relevant NSE circulars with respect to "Pre-Trade risk controls - Market Price Protection" and "Pre-Trade risk controls - Limit Price Protection". System auditor shall verify these checks which are designed to reduce excessive order rejections due to LPP and normally order placement is within the ranges as prescribed by Exchange circulars. |   |

| Sr. No.   | Pre Trade Risk Control   | Requirement  | Compliance Status (Complied/Non-Complied) |
|---|--|--|---|
|   |  | Applicable for Segments: CM / FO / CD / CO   |   |
| 5   | Market Price Protection Check  | The pre-set percentage of LTP shall necessarily be accompanied by a limit price. Members are required to adhere to the Market Price Protection check, by not placing any algorithmic orders on the Exchange as a market order. System Auditor shall refer relevant NSE circulars with respect to "Pre-Trade risk controls - Market Price Protection". System auditor shall verify these checks which are designed to ensure that order placement is within the ranges as prescribed by Exchange circulars.<br>Applicable for Segments: CM / FO / CD / CO |   |
| <b>At UCC level including Proprietary Trading</b> |  |  |   |
| 6   | Cumulative Open Order Value Check  | Orders shall not be released in breach of Individual client level cumulative open order value check at the client level. Open order value for a client is the total value of its unexecuted orders released from trading members system. System shall not permit the user to set "Unlimited values".<br>Applicable for Segments: CM / FO / CD / CO   |   |
| 7   | Net Position Vs. Available Margin Check  | Orders shall not be released in breach of Net positions as against the available margin defined by the trading member for the client.<br>Applicable for Segments: CM / FO / CD / CO  |   |
| 8   | RBI Violation Check for FII Restricted stocks                                      | Orders shall not be released for security restricted by RBI from time to time.<br>Applicable for Segments: CM  |   |
| 9   | MWPL Violation Check   | Orders shall not be released in breach of market wide position limit as defined by the Exchange for the security in respective segment.<br>Applicable for Segments: FO / CD / CO   |   |
| 10  | Position Limit Check   | Orders shall not be released in breach of position limit as defined by the trading member for the client.<br>Applicable for Segments: FO / CD / CO   |   |
| 11  | Trading Limit Check  | Orders shall not be released in breach of overall trading limits as defined by the trading member for the client.<br>Applicable for Segments: CM / FO / CD / CO  |   |
| 12  | Exposure Limit Check at individual client level & at overall level for all clients | Orders shall not be released in breach of exposure limit as defined by the trading member for the client.<br>Applicable for Segments: CM / FO / CD / CO  |   |
| 13  | Turnover Limit Check   | Orders shall not be released in breach of turnover limit as defined by the trading member for the client.<br>Applicable for Segments: CM / FO / CD / CO  |   |
| 14  | Security Wise Limit Check  | Orders shall not be released in breach of security-wise value limit as defined by the trading member for individual security.<br>Applicable for Segments: CM   |   |
| 15  | Automated Execution Check  | Algo to account for all executed, unexecuted, and unconfirmed orders placed by the system before   |   |

| Sr. No. | Pre Trade Risk Control                        | Requirement   | Compliance Status (Complied/Non-Complied) |
|---------|---|---|---|
|         |   | releasing further orders. Algo system to have pre-defined parameters for an automatic stoppage in event of Algo execution leading to a loop or a runaway situation.<br>Applicable for Segments: CM / FO / CD / CO   |   |
| 16      | Efficient Price Discovery and Fair Play Check | The algorithm strategy/ies are conducive to efficient price discovery and fair play and shall not take liquidity away from the market (applicable to algorithm strategy/ies in the Commodity Derivative segment).<br>Applicable for Segments: CM / FO / CD / CO |   |

**Declaration:**

I hereby confirm, Member has complied with the requirement of Exchange Circular NSE/INSP/53939 dated October 03, 2022, and other circulars issued from time to time on "Display of Brokerage, Statutory & Regulatory Levies to the investors" to prominently display the details of brokerage/charges to be levied for each order to the investor on the "Order placement window/screen" on their Trading applications prior to placement of order.

There is no conflict of interest with respect to the member being audited and our directors / promoters are not directly or indirectly related to the current directors or promoters of the member being audited.

Signature:

(Name of the Auditor & Auditing firm)

CISA / DISA / CISM / CISSP Reg. No:

Date:

Place:

Stamp/Seal:

## **Annexure 6**

### **Auditor's Report**

#### **Computer to Computer Link (CTCL) / Algorithmic Trading (AT)**

**(To be on the letterhead of the system auditor, all pages to be duly stamped and signed)**

**NSE Trading Member Code:**

**NSE Trading Member Name:**

**Areas of Audit:**

- Risk Management
- Security Policy and implementation
- Capacity Management
- Disaster Recovery and Backups
- Vulnerability Test

The detailed findings will be grouped under the above broad categories and classified as 'Strong', 'Medium' or 'Weak' and overall audit rating will be given.

| Controls / Processes   | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|--|--|--------------------------------------|----------------|
| <b>Location Confirmation</b><br><br><b>The installed CTCL / AT system features are as prescribed by the NSE.</b><br><br><b>The installed CTCL / AT system parameters are as per NSE norms</b>  | <p>Whether order routing server for CTCL / AT is located in India</p> <p>System network and Network Diagram</p> <p>Risk Management Tools</p> <p>Should allow for risk management of the orders placed and online risk monitoring of the orders being placed. (including upfront real-time risk management) should be in place for all orders placed through NNF terminals.</p> <p>CTCL / AT Version</p> <ul style="list-style-type: none"> <li>Order Gateway Version</li> <li>Risk Administration / Manager Version</li> </ul>   | Results                              | Opinions       |
| <b>Trading Process</b><br><b>The installed CTCL / AT system allows for placing of trades only for authorized clients</b><br><br><b>Risk Management</b><br><b>The installed CTCL / AT system is capable of assessing the risk of the client as soon as the order comes in and informs the client of acceptance/rejection of the order within a reasonable period.</b> | <p>User id Verification</p> <p>Only duly authorized User's orders are allowed to be placed.</p> <p>Order Parameters based on the respective risk profile of the user</p> <p>There is online risk assessment of all orders placed through the CTCL / AT system with following checks :</p> <ul style="list-style-type: none"> <li>Order Value per order should not exceed as specified in RMS (not exceeding the maximum limit as specified by Exchange)</li> <li>Order Quantity per order should not exceed as specified in RMS</li> <li>Spread order value and quantity limit per order should not exceed as specified in RMS.</li> <li>For all checks in Individual Order Level, Trading Members (TM) are required to maintain a policy which shall be approved by the Board/All partners/Proprietor of the Trading Member.</li> <li>Cumulative value of all unexecuted / open orders should not exceed as specified in RMS at client level</li> <li>Order value limit at client level</li> <li>Order value limit at branch level</li> <li>Security-wise order limits at client level</li> <li>All orders generated by Algorithmic trading product adheres to the permissible limit of orders per second, if any as may be specified by SEBI /Exchange.</li> </ul> | Results                              | Opinions       |

| Controls / Processes   | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|--|--|--------------------------------------|----------------|
| <b>Risk Parameters Control for AT</b>  | <ul style="list-style-type: none"> <li>The system should allow only authorized users to set the risk parameter. The system auditor should verify the process for any change in Risk Parameters and check whether changes are being done only by Authorised User with proper validation/re-confirmation.</li> <li>The System should also maintain a log of all the risk parameter changes made. Integrity of all such logs is maintained, in other words logs should not be tampered. System auditor should verify &amp; conduct audit of logs maintained for all modifications in Risk Parameters.</li> <li>Trading Members (TM) are required to maintain a policy along with authorisation for any change, validation/ modification by authorised person. The said policy shall be approved by the Board/All partners/Proprietor of the Trading Member.</li> </ul>  |                                      |                |
| <b>Order /Trade Limit Controls</b><br><b>The installed CTCL / AT system provides a system based control facility on the trading limits of the clients and exposures taken by the clients including set pre-defined limits on the exposure and turnover of each client.</b> | <p>Only orders that are within the parameters specified by the risk management systems are allowed to be placed.</p> <p>Are there provisions for setting trading limits, exposure limits, position limits, order quantity limits order value limits, price range checks, Net Position limits for all CTCL / AT users based on risk assessment, credit quality and available margins of the client. Also appropriate limits for securities which are subject to FII limits as specified as RBI.</p> <p>The system should have functionality for mandatorily routing of orders generated by algorithm through the automated risk management system.</p> <p>The ALGO server should have capacity to monitor orders / trades routed through Algo trading and have online risk management for all orders through Algorithmic trading.</p> <p>The risk management system should have risk controls functionality and only algorithm orders that are within the parameters specified by the risk management systems are allowed to be placed.</p> |                                      |                |
| <b>Order Reconfirmation Facility</b>   | The system has a manual override facility for allowing orders that do not fit the system based risk control parameters   |                                      |                |

| Controls / Processes   | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|--|--|--------------------------------------|----------------|
| <p>The installed CTCL / AT system provides for reconfirmation of orders which are larger than that as specified by the member's risk management system.</p> <p><b>Execution of Orders / Order Logic</b></p> <p>The installed CTCL / AT system provides a system based control facility over the order input process</p>  | <p>Order Numbering Methodology</p> <p>If the system is enabled for CTCL / AT the system has an internal unique order numbering system</p> <p>Order Matching</p> <p>The system does not have any order matching function resulting into cross trades of the clients orders of a trading member with each other. All orders are passed on to the exchange trading system for matching.</p> <p>Whether Broker is using similar logic/ priorities as used by Exchange to treat CTCL / AT user orders.</p> <p>Whether CTCL / AT orders are having unique flag/ tag as specified by the Exchange and systems identify the orders emanating from CTCL/AT by populating the 15-digit NNF field in the order structure for every order.</p> |                                      |                |
| <p><b>Application Access Control</b></p> <p>The installed CTCL / AT system provides a system based access control over the CTCL / AT server as well as the risk management and front end dealing applications while providing for security</p> <p><b>Session Security</b></p> <p>The installed CTCL / AT system provides for session security for all sessions established with the CTCL / AT server by the front end application.</p> <p><b>Database Security</b></p> <p>The installed CTCL / AT system has sufficient controls</p> | <p>Access controls</p> <ul style="list-style-type: none"> <li>The system allows access to only authorized users</li> <li>The system has appropriate authority levels to ensure that the limits can be setup only by persons authorized by the risk / compliance manager</li> <li>The system has a password/two factor mechanism which restricts access to authenticate users.</li> </ul> <p>Session Security</p> <ul style="list-style-type: none"> <li>The system uses session identification and authentication measures to restrict sessions to authorized user only.</li> <li>The system uses session security measures like encryption to ensure confidentiality of sessions initiated.</li> </ul> <p>Database Security</p>   | Results                              | Opinions       |



| Controls / Processes  | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|---|--|--------------------------------------|----------------|
| <p>over the access to and integrity of the database</p> <p><b>Encryption</b><br/>The installed CTCL / AT system uses confidentiality protection measures to ensure session confidentiality.</p>   | <ul style="list-style-type: none"> <li>The access to the CTCL / AT database is allowed only to authorized users / applications.</li> <li>The CTCL / AT database is hosted on a secure platform.</li> <li>The CTCL / AT database stores all the details of user ids activated for CTCL / AT along with user names and passwords securely.</li> <li>Frequency of antivirus patch updation</li> </ul> <p>Session Encryption</p> <ul style="list-style-type: none"> <li>The system uses session confidentiality protection mechanisms</li> <li>The system uses a secure storage mechanism for storing of usernames and passwords.</li> <li>The system adequately protects the confidentiality of the users' trade data.</li> </ul> |                                      |                |
| <p>The installed CTCL / AT system provides a system based event logging and system monitoring facility which monitors and logs all activities / events arising from actions taken on the gateway / database server, authorized user terminal and transactions processed for clients or otherwise and the same is not susceptible to manipulation.</p> | <p>The installed CTCL / AT system has a provision for off line monitoring and risk management as per the requirements of NSE and includes reports / logs on</p> <ul style="list-style-type: none"> <li>Number of Authorized Users</li> <li>Activity logs</li> <li>Systems logs</li> <li>Number of active clients</li> <li>Review of logs (activity/system/alert/incident)</li> </ul>   |                                      |                |
| <p>The installed CTCL / AT system Authentication mechanism is as per the guidelines of the NSE</p>  | <p>The installed CTCL / AT system's uses passwords for authentication.</p> <p>The password policy / standard are documented.</p> <p>The system requests for identification and new password before login into the system.</p> <p>The installed CTCL / AT system's Password features include</p> <ul style="list-style-type: none"> <li>The Password is masked at the time of entry.</li> <li>System mandated changing of password when the user logs in for the first time.</li> <li>Automatic disablement of the user on entering erroneous password on three consecutive occasions.</li> </ul>   | Results                              | Opinions       |

| Controls / Processes  | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|---|--|--------------------------------------|----------------|
|   | <ul style="list-style-type: none"> <li>Automatic expiry of password on expiry of reasonable period of time as determined by member.</li> <li>System controls to ensure that the password is alphanumeric (preferably with one special character), instead of just being alphabets or just numerical.</li> <li>System controls to ensure that the changed password cannot be the same as of the last password</li> <li>System controls to ensure that the Login id of the user and password should not be the same.</li> <li>System controls to ensure that the Password should be of reasonable minimum length (and no arbitrary maximum length cap or character class).</li> <li>System controls to ensure that the Password is encrypted at members end so that employees of the member cannot view the same at any point of time.</li> <li>System control ensures Re-initialisation of access on entering fresh passwords.</li> </ul> |                                      |                |
| <b>The Installed CTCL / AT systems backup capability is adequate as per the requirements of the NSE for overcoming loss of product integrity.</b> | <p>Are backups of the following system generated files maintained as per the NSE guidelines?</p> <ul style="list-style-type: none"> <li>At the CTCL / AT server/gateway level</li> <li>Database</li> <li>Audit Trails</li> <li>Reports</li> </ul> <p>At the CTCL / AT user level</p> <ul style="list-style-type: none"> <li>Market Watch</li> <li>Logs</li> <li>History</li> <li>Reports</li> <li>Audit Trails</li> <li>Alert logs</li> </ul> <p>Are backup procedures documented?</p> <p>Are backup logs maintained?</p> <p>Have the backups been verified and tested?</p> <p>Are the backup media stored safely in line with the risk involved?</p>  | Results                              | Opinions       |

| Controls / Processes  | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|---|--|--------------------------------------|----------------|
|   | Are there any recovery procedures and have the same been tested?   |                                      |                |
| <b>The installed CTCL / AT system parameters are as per NSE norms</b>   | Gateway Parameters <ul style="list-style-type: none"> <li>• Trader ID</li> </ul> Market Segment <ul style="list-style-type: none"> <li>• IP Address</li> <li>• (NSE Network)</li> <li>• Leased Line ID</li> </ul>  |                                      |                |
| <b>Trades Information</b><br>The installed CTCL / AT system provides a system based control facility over the trade confirmation process<br><br><b>Settlement of Trades</b><br>The installed CTCL / AT system provides a system based reports on contracts, margin requirements, payment and delivery obligations | Trade Confirmation and Reporting Feature<br>Should allow confirmation and reporting of the orders that have resulted in trade<br>The system has a feature which provides history of trades for the day to the user<br><br>Margin Reports feature<br>Should allow for the reporting of client wise / user wise margin requirements as well as payment and delivery obligations.   | Results                              | Opinions       |
| <b>To ensure information security for the Organization in general and the installed CTCL / AT system in particular policy and procedures as per the NSE / SEBI requirements must be established, implemented and maintained.</b>  | Systems & procedures:<br>Whether installed systems & procedures are adequate to handle CTCL / AT orders/ trades?<br><br>Maintenance of User details:<br>Whether details of users activated for CTCL / AT facilities is maintained along with user name, unique identification of user, authorization levels.<br><br>Does the organization's documented policy and procedures include the following policies and if so are they in line with the NSE/SEBI requirements? <ul style="list-style-type: none"> <li>• Information Security Policy</li> <li>• Password Policy</li> <li>• Network Security Policy</li> <li>• Application Software Policy</li> <li>• Patch Management Policy</li> <li>• Technical Glitch Policy</li> <li>• Risk Management Policy</li> <li>• Backup Policy (data should be available for minimum 5 years)</li> <li>• Audit Trail Policy (data should be available for minimum 5 years)</li> </ul> | Results                              | Opinions       |

| Controls / Processes   | Test Case   | Results, Observations & Control Risk | Auditor's Risk |
|--|---|--------------------------------------|----------------|
|  | <p>Whether all the documents are classified as per CIA (Confidentiality, Integrity and Availability)</p> <p>Does the organization follow any other policy or procedures or documented practices that are relevant?</p>  |                                      |                |
| <b>How will the organization assure customers prompt access to their funds and securities in the event the organization determines it is unable to continue its business in the primary location</b> | <p>System Failure Backup</p> <p>Are there suitable backups for failure of any of the critical system components like</p> <ul style="list-style-type: none"> <li>• Gateway / Database Server / web server</li> <li>• CTCL / AT router</li> <li>• Network Switch</li> </ul>   | Results                              | Opinions       |
| <b>Firewall</b>  | <p>Is a firewall implemented?</p> <p>Are all servers placed in a DMZ and segregated from other zones by using a firewall?</p> <p>Is there segregation between application and database servers?</p> <p>Are user and server zones segregated?</p> <p>Is specific port/service access granted on firewall by following a proper approval process?</p> | Results                              | Opinions       |
| <b>Physical Security</b>   | <p>Physical Access Control</p> <p>Server Room/Network Room Security (Environmental Controls)</p> <p>Server Room/Network Room Security (UPS)</p> <p>Server Room/Network Room Security (HVAC)</p>   | Results                              | Opinions       |

**Declaration:**

There is no conflict of interest with respect to the member being audited and our directors / promoters are not directly or indirectly related to the current directors or promoters of the member being audited.

Signature

(Name of the Auditor & Auditing firm)

CISA / DISA / CISM / CISSP Reg. No:

Date:

Place:

Stamp/Seal:

## **Annexure II**

### **Auditor's Report**

#### **Application programming Interface (API) /Member Frontend for Retail Algo**

**(To be on the letterhead of the system auditor, all pages to be duly stamped and signed)**

**NSE Trading Member Code:**

**NSE Trading Member Name:**

**Areas of Audit:**

- Risk Management
- Security Policy and implementation
- Capacity Management
- Disaster Recovery and Backups
- Vulnerability Test

The detailed findings will be grouped under the above broad categories and classified as 'Strong', 'Medium' or 'Weak' and overall audit rating will be given.

| Controls / Processes  | Test Case   | Results, Observations & Control Risk | Auditor's Risk |
|---|---|--------------------------------------|----------------|
| <p><b>Location Confirmation</b></p> <p>The installed trading system features are as prescribed by the NSE.</p> <p>The installed Trading system parameters are as per NSE norms</p>  | <p>Whether order routing server for trading system is located in India</p> <p>System network and Network Diagram</p> <p>Risk Management Tools<br/>Should allow for risk management of the orders placed and online risk monitoring of the orders being placed.<br/>(including upfront real-time risk management) should be in place for all orders placed through NNF terminals.</p> <p>API Version</p> <ul style="list-style-type: none"> <li>• Order Gateway Version</li> <li>• Risk Administration / Manager Version</li> <li>• Front End / Order Placement Version</li> </ul>   | Results                              | Opinions       |
| <p><b>Trading Process</b></p> <p>The installed Trading system allows for placing of trades only for authorized clients</p> <p><b>Risk Management</b></p> <p>The installed trading system is capable of assessing the risk of the client as soon as the order comes in and informs the client of acceptance/rejection of the order within a reasonable period.</p> | <p>Client ID Verification</p> <p>Only duly authorized client's orders are allowed to be placed.</p> <p>Order Parameters based on the respective risk profile of the client</p> <p>There is online risk assessment of all orders placed through the trading system with following checks :</p> <ul style="list-style-type: none"> <li>• Order Value per order should not exceed as specified in RMS (not exceeding the maximum limit as specified by Exchange)</li> <li>• Order Quantity per order should not exceed as specified in RMS</li> <li>• Spread order value and quantity limit per order should not exceed as specified in RMS.</li> <li>• For all checks in Individual Order Level, Trading Members (TM) are required to maintain a policy which shall be approved by the Board/All partners/Proprietor of the Trading Member</li> <li>• Cumulative value of all unexecuted / open orders should not exceed as specified in RMS at client level</li> <li>• Order value limit at client level</li> <li>• Order value limit at branch level</li> </ul> | Results                              | Opinions       |

| Controls / Processes  | Test Case   | Results, Observations & Control Risk | Auditor's Risk |
|---|---|--------------------------------------|----------------|
| <p><b>Risk Parameters Control for AT</b></p>  | <ul style="list-style-type: none"> <li>Security-wise order limits at client level</li> <li>All orders generated by Algorithmic trading product adheres to the permissible limit of orders per second, if any as may be specified by SEBI /Exchange.</li> <li>The system should allow only authorized users to set the risk parameter. The system auditor should verify the process for any change in Risk Parameters and check whether changes are being done only by Authorised User with proper validation/re-confirmation.</li> <li>The System should also maintain a log of all the risk parameter changes made. Integrity of all such logs is maintained, in other words logs should not be tampered. System auditor should verify &amp; conduct audit of logs maintained for all modifications in Risk Parameters.</li> <li>Trading Members (TM) are required to maintain a policy along with authorisation for any change, validation/ modification by authorised person. The said policy shall be approved by the Board/All partners/Proprietor of the Trading Member.</li> </ul> |                                      |                |
| <p><b>Order /Trade Limit Controls</b><br/>The installed Trading system provides a system based control facility on the trading limits of the clients and exposures taken by the clients including set pre-defined limits on the exposure and turnover of each client.</p> | <ul style="list-style-type: none"> <li>Only orders that are within the parameters specified by the risk management systems are allowed to be placed</li> <li>The system should have functionality for mandatorily routing of orders generated by algorithm through the automated risk management system.</li> <li>The ALGO server should have capacity to monitor orders / trades routed through Algo trading and have online risk management for all orders through Algorithmic trading.</li> <li>The risk management system should have risk controls functionality and only algorithm orders that are within the parameters specified by the risk</li> </ul>   |                                      |                |



| Controls / Processes  | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|---|--|--------------------------------------|----------------|
| <p><b>Order Reconfirmation Facility</b><br/>The installed Trading system provides for reconfirmation of orders which are larger than that as specified by the member's risk management system.</p> <p><b>Execution of Orders / Order Logic</b><br/>The installed Trading system provides a system based control facility over the order input process</p>                   | <p>management systems are allowed to be placed.</p> <p>The system has a manual override facility for allowing orders that do not fit the system based risk control parameters</p> <p>Order Numbering Methodology<br/>If the system is enabled for internet trading the system has an internal unique order numbering system</p> <p>Order Matching<br/>The system does not have any order matching function resulting into cross trades of the clients orders of a trading member with each other and all orders are passed on to the exchange trading system for matching.</p> <p>Whether Broker is using similar logic/ priorities as used by Exchange to treat API client orders.</p> <p>Whether API orders are having unique flag/ tag as specified by the Exchange and systems identify the orders emanating from API by populating the 15-digit NNF field in the order structure for every order.</p> |                                      |                |
| <p><b>Application Access Control</b><br/>The installed Trading system provides a system based access control over the trading server as well as the risk management and front end dealing applications while providing for security</p> <p><b>Session Security</b><br/>The installed Trading system provides for session security for all sessions established with the</p> | <p>Access controls</p> <ul style="list-style-type: none"> <li>The system allows access to only authorized users</li> <li>The system has a password/two factor mechanism which restricts access to authenticate users.</li> </ul> <p>Session Security</p> <ul style="list-style-type: none"> <li>The system uses session identification and authentication measures to restrict sessions to authorized user only.</li> </ul>  | Results                              | Opinions       |

| Controls / Processes   | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|--|--|--------------------------------------|----------------|
| <p><b>trading server by the front end application.</b></p> <p><b>Database Security</b><br/>The installed Trading system has sufficient controls over the access to and integrity of the database</p> <p><b>Encryption</b><br/>The installed Trading system uses confidentiality protection measures to ensure session confidentiality.</p>                 | <ul style="list-style-type: none"> <li>The system uses session security measures like encryption to ensure confidentiality of sessions initiated.</li> <li>Session login details should not be stored on the devices used for Trading</li> </ul> <p>Database Security</p> <ul style="list-style-type: none"> <li>The access to the trading database is allowed only to authorized users / applications.</li> <li>The Trading database is hosted on a secure platform.</li> <li>The Trading database stores the user names / passwords securely.</li> </ul> <p>Session Encryption</p> <ul style="list-style-type: none"> <li>The system uses SSL or similar session confidentiality protection mechanisms</li> <li>The system uses a secure storage mechanism for storing usernames and passwords.</li> <li>The system adequately protects the confidentiality of the user's trade data.</li> </ul> |                                      |                |
| <p><b>The installed Trading system provides a system based event logging and system monitoring facility which monitors and logs all activities / events arising from actions taken on the gateway / database server, authorized user terminal and transactions processed for clients or otherwise and the same is not susceptible to manipulation.</b></p> | <p>The installed Trading systems has a provision for off line monitoring and risk management as per the requirements of NSE and includes reports / logs on</p> <ul style="list-style-type: none"> <li>Number of Authorized Users</li> <li>Activity logs</li> <li>Systems logs</li> <li>Number of active clients</li> <li>Review of logs (activity/system/alert/incident)</li> </ul>  |                                      |                |
| <p><b>The installed Trading system Authentication mechanism is as per the guidelines of the NSE</b></p>  | <p>The installed Trading system's uses passwords for authentication.</p> <p>The password policy / standard are documented.</p> <p>The system requests for identification and new password before login into the system.</p> <p>The installed Trading system's Password features include</p> <ul style="list-style-type: none"> <li>The Password is masked at the time of entry.</li> </ul>   | Results                              | Opinions       |

| Controls / Processes  | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|---|--|--------------------------------------|----------------|
|   | <ul style="list-style-type: none"> <li>• System mandated changing of password when the user logs in for the first time.</li> <li>• Automatic disablement of the user on entering erroneous password on three consecutive occasions.</li> <li>• Automatic expiry of password on expiry of reasonable period of time as determined by member</li> <li>• System controls to ensure that the password is alphanumeric (preferably with one special character), instead of just being alphabets or just numerical.</li> <li>• System controls to ensure that the changed password cannot be the same as of the last password</li> <li>• System controls to ensure that the Login id of the user and password should not be the same.</li> <li>• System controls to ensure that the Password should be of reasonable minimum length (and no arbitrary maximum length cap or character class).</li> <li>• System controls to ensure that the Password is encrypted at members end so that employees of the member cannot view the same at any point of time.</li> <li>• System control ensures Re-initialisation of access on entering fresh passwords</li> </ul> |                                      |                |
| <b>The Installed Trading systems backup capability is adequate as per the requirements of the NSE for overcoming loss of product integrity.</b> | <p>Are backups of the following system generated files maintained as per the NSE guidelines?</p> <ul style="list-style-type: none"> <li>• At the Trading server/gateway level</li> <li>• Database</li> <li>• Audit Trails</li> <li>• Reports</li> </ul> <p>At the API user level</p> <ul style="list-style-type: none"> <li>• Market Watch</li> <li>• Logs</li> <li>• History</li> <li>• Reports</li> <li>• Audit Trails</li> </ul>  | Results                              | Opinions       |

| Controls / Processes   | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|--|--|--------------------------------------|----------------|
|  | <ul style="list-style-type: none"> <li>Alert logs</li> </ul> <p>Are backup procedures documented?</p> <p>Are backup logs maintained?</p> <p>Have the backups been verified and tested?</p> <p>Are the backup media stored safely in line with the risk involved?</p> <p>Are there any recovery procedures and have the same been tested?</p>   |                                      |                |
| <p><b>The installed Trading system features are as prescribed by the NSE.</b></p> <p><b>The installed Trading system parameters are as per NSE norms</b></p>     | <p>Main Features</p> <p>Price Broadcast<br/>The system has a feature for receipt of price broadcast data</p> <p>Order Processing : The system has a feature :</p> <ul style="list-style-type: none"> <li>Which allows order entry and confirmation of orders.</li> <li>which allows for modification or cancellation of orders placed</li> </ul> <p>Trade Confirmation<br/>The system has a feature which enables confirmation of trades</p> <p>Gateway Parameters</p> <ul style="list-style-type: none"> <li>Trader ID</li> </ul> <p>Market Segment</p> <ul style="list-style-type: none"> <li>IP Address</li> <li>(NSE Network)</li> <li>Leased Line ID</li> </ul> |                                      |                |
| <p><b>Execution of Orders / Order Logic</b></p> <p><b>The installed Trading system provides a system based control facility over the order input process</b></p> | <p>Order Entry<br/>The system has order placement controls that allow only orders matching the system parameters to be placed.</p> <p>Order Modification<br/>The system allows for modification of orders placed.</p> <p>Order Cancellation<br/>The system allows for cancellation of orders placed</p> <p>Order Outstanding Check</p>   | Results                              | Opinions       |

| Controls / Processes   | Test Case  | Results, Observations & Control Risk | Auditor's Risk |
|--|--|--------------------------------------|----------------|
| <p><b>Trades Information</b><br/>The installed Trading system provides a system based control facility over the trade confirmation process</p> <p><b>Settlement of Trades</b><br/>The installed Trading system provides a system based reports on contracts, margin requirements, payment and delivery obligations</p> | <p>The system has a feature for checking the outstanding orders i.e. the orders that have not yet traded or partially traded.</p> <p>Trade Confirmation and Reporting Feature<br/>Should allow confirmation and reporting of the orders that have resulted in trade</p> <p>The system has a feature which provides history of trades for the day to the user</p> <p>The system should have a feature for reporting investor grievances related to algo trading and functionality for the monitoring of APIs for prohibited activities.</p> <p>The system should inform the subscription charges and brokerage collected from the client. However, prominent and complete disclosures of all the charges shall be made to the client. The broker shall also ensure that such arrangements do not result in any conflict of interest.</p> <p>Margin Reports feature<br/>Should allow for the reporting of client wise / user wise margin requirements as well as payment and delivery obligations.</p> |                                      |                |
| <p><b>API (Application Programming Interface) Authentication &amp; Security</b></p>  | <ul style="list-style-type: none"> <li>• Whether system has provision to ensure Strong &amp; mutual Authentication Mechanisms such as API keys, OAuth, or JWT, ensuring secure token management practices and defining appropriate expiration time.</li> <li>• Open APIs are not permitted by Trading member and allow access only through a unique vendor client specific API key and static IP whitelisted by the trading member to ensure identification and traceability of the retail user.</li> <li>• Whether access is allowed through OAuth (Open Authentication) based authentication only</li> <li>• Whether access to API is provided through two factor authentication</li> <li>• Whether all API sessions are compulsory logged out every day</li> </ul>  |                                      |                |

| Controls / Processes  | Test Case   | Results, Observations & Control Risk | Auditor's Risk |
|---|---|--------------------------------------|----------------|
|   | <p>before the start of the next trading day.</p> <ul style="list-style-type: none"> <li>Secure Storage of Secrets:<br/>Whether system have provision not to Store or Transmit API keys, credentials and sensitive data without secure encryption and access controls</li> <li>Secure Software Development Lifecycle (SDLC):<br/>Integrate security considerations into the entire API development process and conduct security training for developers to promote secure coding practices.</li> <li>Whether system has provision to Identify Registered and non-registered algos</li> <li>Whether system has provision to restrict order types/contracts/securities which are restricted by the Exchange.</li> </ul> <p>Non- Registered Algos:</p> <ul style="list-style-type: none"> <li>Whether system has provision that non-registered algos which are below defined Threshold order per second (TOPS) tagged as Algo and a generic id is passed with the order message.</li> <li>Whether broker have ensured that non-registered Algos are run only through one of the predefined API Keys.</li> </ul> |                                      |                |
| <p><b>To ensure information security for the Organisation in general and the installed Trading system in particular policy and procedures as per the NSE / SEBI requirements must be established, implemented and maintained.</b></p> | <p>Does the organization's documented policy and procedures include the following policies and if so are they in line with the NSE / SEBI requirements?</p> <ul style="list-style-type: none"> <li>Information Security Policy</li> <li>Password Policy</li> <li>Network Security Policy</li> <li>Application Software Policy</li> <li>Backup Policy (data should be available for minimum 5 years)</li> <li>Audit Trail Policy (data should be available for minimum 5 years)</li> <li>Patch Management Policy</li> <li>Technical Glitch Policy</li> <li>Risk Management Policy</li> </ul>   | Results                              | Opinions       |

| Controls / Processes   | Test Case   | Results, Observations & Control Risk | Auditor's Risk |
|--|---|--------------------------------------|----------------|
|  | <ul style="list-style-type: none"> <li>Whether all the documents are classified as CIA (Confidentiality, Integrity and Availability)</li> </ul> <p>Does the organisation follow any other policy or procedures or documented practices that are relevant?</p>   |                                      |                |
| <b>How will the organization assure customers prompt access to their funds and securities in the event the organization determines it is unable to continue its business in the primary location</b> | <p>System Failure Backup</p> <p>Are there suitable backups for failure of any of the critical system components like</p> <ul style="list-style-type: none"> <li>Gateway / Database Server / web server</li> <li>CTCL/AT router</li> <li>Network Switch</li> </ul>   |                                      |                |
| <b>Firewall</b>  | <p>Is a firewall implemented?</p> <p>Are all servers placed in a DMZ and segregated from other zones by using a firewall?</p> <p>Is there segregation between application and database servers?</p> <p>Are user and server zones segregated?</p> <p>Is specific port/service access granted on firewall by following a proper approval process?</p> |                                      |                |
| <b>Physical Security</b>   | <p>Physical Access Control</p> <p>Server Room/Network Room Security (Environmental Controls)</p> <p>Server Room/Network Room Security (UPS)</p> <p>Server Room/Network Room Security (HVAC)</p>   |                                      |                |

**Declaration:**

There is no conflict of interest with respect to the member being audited and our directors / promoters are not directly or indirectly related to the current directors or promoters of the member being audited.

Signature

(Name of the Auditor & Auditing firm)

CISA / DISA / CISM / CISSP Reg. No :

Date:

Place:

Stamp/Seal: