



Metropolitan Stock Exchange of India Limited

Department: CTCL

Segment: ALL

Circular No.: MSE/CTCL/7387/2019

March 01, 2019

Subject: Algorithmic Trading

To All Members,

This is in continuation to SEBI Circular No. CIR/MRD/DP/06/2014 dated February 7, 2014 and the various circulars issued by Exchange from time to time regarding Testing of software used in or related to Trading and Risk Management systems.

In line with the above, Trading members are hereby informed about the additional mandatory risk checks and other model checks (wherever applicable), which are required to be provided while applying for the Algorithmic Trading facility. Accordingly, please find attached the revised formats of Application for Algorithmic Trading and the Annexures to be submitted at the time of approval.

Members are required to take note of the same with immediate effect.

**For and on behalf of
Metropolitan Stock Exchange of India Limited**

**Sanju Padmanabhan
Manager - Market Operations (CTCL)**

Application Form for use of Algorithmic Trading (Algo)
(On the letter head of the member)

To
CTCL Department
Metropolitan Stock Exchange of India Limited
4th Floor, Vibgyor Towers,
Plot No. C-62, Opp.Trident Hotel,
Bandra Kurla Complex, Bandra (East),
Mumbai – 400 098.

Dear Sir,

I / We _____ (Name of member) hereby request approval of the Exchange for using Algorithmic Trading (Algo) through CTCL _____ (Name of the Algorithmic Trading Software product along with version number) on below mentioned CTCL Id in _____ Segment.

Sr. #	Particulars	Details
1.	Member ID:	
2.	Product Type: ➤ ALGO	
3.	Category: ➤ CTCL	
4.	Sub Category: ➤ Approved Algo CTCL ➤ Approved Algo at Colo	
5.	Product Feature/Protocol: ➤ DC/IML/ TCP/ UDP/ OTHERS	
6.	Operating System: ➤ Linux ➤ Windows	
7.	Segment: Capital market/Equity Derivatives/Currency Derivatives	
8.	Name of the Algo Strategy:	
9.	Version No.:	
10.	Vendor Details:	
11.	Market Data Type: ➤ TBT ➤ NON TBT ➤ Both	
12.	Algo Type: 1. Execution Algo 2. Arbitrage Algo 3. Alpha Seeking Algo 4. High Frequency Algo 5. Scalping Algo 6. Other Algos	
13.	Algo Used for : ➤ PRO ➤ Client ➤ Both	
14.	Registered Office/ Correspondence address:	
15.	Telephone No:	

16.	Fax No.:	
17.	Name(s) & Designation of Authorised Signatory:	
18.	Contact details (Phone, Fax, Email) of Authorised Signatory:	
19.	Address of the office where Algo will be provided: Nature of Office	Regd. Office / Head Office /Dealing Office
20.	Technical details a. Hardware b. Software:	
21.	Mode of connectivity between the CTCL server and the Exchange (VSAT/Leased Line):	
22.	User Id for using Algo:	
23.	Algo Strategy Name and Version number: Detailed Write-up on Algo Strategy (To be provided on letterhead of the member):	

I/We confirm and certify that the software for Algorithmic Trading has undergone tests by us and are satisfied that it meets the requirements specified by the Exchange and SEBI. We undertake to comply with and be bound by the Rules, Bye-laws, Regulations of the Exchange, SEBI, RBI and any other statutory and regulatory body(ies) as may be applicable from time to time.

I/We certify that all the statements are true and correct to the best of our knowledge. We are aware that in case any of the statements are found to be incorrect or false, we are liable for disciplinary action.

I/We understand that the Exchange reserves the right to call for additional information / documents /demonstration related to Algo trading at any time as it may deem fit.

Stamp & Signature of the authorized representative of the Member

Date:

Place:

Trading member's undertaking for use of Algorithmic Trading (Algo)

I / We....., an individual / a firm registered under the Indian Partnership Act, 1932 / a Company / body corporate incorporated under the Companies Act 1956/, and residing at / having registered office at..... give this UNDERTAKING on this day of.....20.... IN FAVOUR of Metropolitan Stock Exchange of India Limited, a company incorporated under the Companies Act of 1956, with registered office at 4th Floor, Vibgyor Towers, Plot No. C-62, Opp.Trident Hotel, Bandra Kurla Complex, Bandra (East), Mumbai – 400 098, India (hereinafter referred to as 'Exchange').

WHEREAS

- a) The Exchange has provided a trading software to enable its members to trade on the Exchange.
- b) The Exchange allows with prior approval, a Computer-to-Computer Link (hereinafter referred to as the 'CTCL') facility for order entry, receipt of order and trade confirmation and also for receipt of data relating to its trade quotations by using their own trading front end software in order to trade on the Exchange trading system.
- c) The Exchange also decides to permit to the interested users of CTCL, an Algorithmic Trading Facility (hereinafter referred to as the "Algo") which means "Any order that is generated using automated execution logic", buy / sell orders are automatically generated and entered by the software / program facility into the Exchange trading system to be matched by the Exchange's system and such permission is subject to terms and conditions as may be specified by the Exchange from time to time.
- d) The Exchange allows to avail the Algo facility by fulfilling all the terms and conditions as may be prescribed from time to time at its discretion.

NOW THEREFORE IN CONSIDERATION OF THE EXCHANGE having agreed to allow me / us to avail the Algo, I / we hereby IRREVOCABLY AND UNCONDITIONALLY UNDERTAKE and agree to abide by and be bound by the following terms and conditions.

1. That I / We shall make the Algo available to the Approved User only after obtaining the prior written permission of the Exchange and subject to such terms and conditions as may be prescribed by the Exchange/ SEBI and / or any other Regulatory body(ies) from time to time.
2. That in addition to such other terms and conditions as may be prescribed from time to time by the Exchange, all the provisions of the Rules, Byelaws, Regulations and Circulars issued by Exchange from time to time relating to use and operation of the Exchange Trading System shall also mutatis mutandis become applicable to the use and operation of the Algo.
3. That notwithstanding anything contained in this Undertaking none of my / our liabilities and obligations as a member of the Exchange shall be affected nor shall be prejudiced in any manner whatsoever, by using Algo for entering orders on the trading system of the Exchange.
4. That without prejudice to the generality of above clause (3) of this Undertaking, I / we shall be responsible to settle all the trades executed by the Approved User on my / our behalf whether such trades were executed with or without my permission / knowledge and that I / we shall be bound to complete / fulfill all my / our obligations / liabilities / commitments arising out of the trades executed by the Approved Person on my / our behalf, including the trades executed by using Algo.
5. That I / We have proper procedures, systems and technical capability to carry out trading through the use of Algo,

6. That I / We have procedures and arrangements to safeguard algorithms from misuse or unauthorized access.
7. That I / We have real-time monitoring systems to identify algorithms that may not behave as expected. I / We shall keep Exchange informed of any such incidents of unexpected behaviour immediately .
8. I / We shall inform the Exchange on any modification or change to the approved Algos or system used for approved Algo.
9. I / We shall be solely responsible for the network infrastructure and connectivity for availing Algo made available to me.
10. I / We shall be solely responsible for all the losses, damages or other costs and consequences arising in any manner for the use of Algo and shall not hold the Exchange responsible in any manner whatsoever.
11. I / We shall adhere to the connectivity diagram approved by the Exchange and shall not make any changes in the connectivity.
12. I / We shall be solely responsible and liable for the consequences in case of any breach of this undertaking and the Exchange shall be entitled to take such appropriate action as deemed fit against me / us.
13. I / We shall not extend Algo to any other person / entity and / or location unless I / We obtain prior written permission from the Exchange.
14. I / We shall ensure that all algorithmic orders are necessarily routed through my / our servers located in India.
15. I / We shall maintain logs of all trading activities to facilitate audit trail. I / We shall maintain record of control parameters, orders, trades and data points emanating from trades executed through Algo.
16. That the Exchange, at its absolute discretion, decides to make the Algo available to me / us only, from the date of enabling the Algo till such time as it may deem fit and further that the Algo may at any time be withdrawn by the Exchange at its discretion without giving me / us any notice or any reasons whatsoever.
17. This Undertaking shall be binding upon my / our heirs, successors, legal representatives and assigns.
18. I / We shall execute, sign, and subscribe to such other documents, papers, agreement, covenants, bonds, and / or undertakings as may be prescribed or required by the Exchange from time to time.

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

Signed by, for and on behalf of: Before me

(On the letter head of the vendor)

To
CTCL Department
Metropolitan Stock Exchange of India Limited
(Formerly known as MCX Stock Exchange Ltd)
4th Floor, Vibgyor Towers,
Plot No. C-62, Opp.Trident Hotel,
Bandra Kurla Complex, Bandra (East),
Mumbai – 400 098.

Kind Attn:

Sub: Algorithmic Trading(Algo) Software procurement confirmation

Dear Sir,

This is to state that M/s. _____ (Name of the member), a registered member of the Exchange, (Member Id: _____, CTCL ID: _____) has purchased Algorithmic Trading (Algo) Software _____, Ver No: _____ for Approved Strategy _____ with Ver No. _____ for MSE _____ segment from us.

We certify that:

1. The Algo software provides for routing of orders through electronic / automated risk management systems of the Trading Member to carry out appropriate validations of all risk parameters before released to the Exchange trading system including individual Order level such as Price Range check, Market Price Protection, Quantity Limits check, Order Value checks, Automated Execution check (All executed, unexecuted and unconfirmed orders) and client level checks such as Cumulative Open Order Value check, Trading limit checks, Exposure limit checks at individual client level and at overall level for all clients. It has capacity to meet all requirements of the Exchange and SEBI as on date.
2. The Algo software has facility for generating and maintaining complete audit trail.
3. The orders generated by Algo are identified as Algorithmic Trading orders while releasing to the Exchange.
4. The orders generated by Algo software are offered to the market for matching and system does not execute cross trades internally.
5. The system has sufficient security features including password protection for User Id, automatic expiry of password at the end of a reasonable duration and reinitialisation of Access on entering fresh password.
6. The Algo software and Approved Strategy has been demonstrated to the Exchange during approval process. We further certify that there are no changes / upgrades to the Algo software and Approved Strategy post approval by the Exchange.

Kindly enable them to start trading using Algo Trading as per the above mentioned Approved Strategy.

Thanking You,
Yours sincerely,
Authorised Signatory

Date:

Place:

UNDERTAKING TO BE GIVEN BY TRADING MEMBER/ STOCK BROKER

I/We _____, an individual /a firm registered under the Indian Partnership Act, 1932 / a Company / body corporate incorporated under the Companies Act of 1956 and residing at / having our registered office at _____ give this UNDERTAKING on this _____ day of _____ at _____ IN FAVOUR of Metropolitan Stock Exchange of India Ltd., a company incorporated under the Companies Act, of 1956, having registered office at 4th Floor, Vibgyor Towers, Plot No. C-62, Opp. Trident Hotel, Bandra Kurla Complex, Bandra (East), Mumbai – 400 098. (hereinafter called 'Exchange').

WHEREAS

- a) The Exchange has provided the trading software to enable its Members to trade on its trading platform.
- b) The Exchange vide its Circular No. MSE/CTCL/925/2012 dated December 31, 2012 had provided guidelines/directions on Computer to Computer Link (CTCL)/Internet Based Trading (IBT)/Algorithmic Trading (Algo)/Direct Market Access (DMA)/Securities Trading using Wireless Technology/Smart Order Routing (SOR) (hereinafter referred as 'CTCL Facility'), In-House CTCL software development by member and ISV empanelment.
- c) SEBI vide their circular no: CIR/MRD/DP/24/2013 dated: August 19, 2013 issued detailed guidelines on testing of software used in or related to trading and risk management to be adhered by the Stock Exchanges, Stock Brokers/ Trading Members and their vendors.
- d) The Exchange had circulated the said SEBI circular for benefits of its members vide circular no. MSE/CTCL/1395/2013 dated. August 21, 2013.
- e) The undersigned member is already using or intending to use various software for trading and risk management as mentioned and hereby agrees to undertake and the abide by the following.

NOW THEREFORE IN CONSIDERATION OF THE EXCHANGE having agreed to consider my application to avail the CTCL Facility, I / We hereby **IRREVOCABLY AND UNCONDITIONALLY UNDERTAKE** and agree to abide by and be bound by the following terms and conditions:

1. I / We undertake that M/s _____ (Name of Trading Member) will take all necessary steps to ensure that every new software and any change thereupon to the trading and/or risk management functionalities of the software will be tested as per the framework prescribed by SEBI / Exchange before deployment of such new / modified software in securities market.
2. I / We undertake that M/s _____ (Name of Trading Member) will ensure that approval of the Exchange is sought for all new / modified software and will comply with various requirements specified by SEBI or the Exchange from time to time with regard to usage, testing and audit of the software.
3. I / We undertake that the absolute liability arising from failure to comply with the above provisions shall lie entirely with M/s _____ (Name of Trading Member).
4. I / we shall execute, sign and subscribe to such other documents, papers, agreements, covenants, bonds, and/or undertakings as may be prescribed or required by Exchange/SEBI from time to time.

5. I/We also agree and understand that in the event of my/our non-compliance with any of the provisions as mentioned above, Exchange shall take such action against us as it may deem fit in this regard including suspension, penalties, fines, etc.
6. I/ We shall indemnify and keep indemnified the Exchange, their directors, managers, officers, employees and agents harmless against every and all claims, demands, actions, proceedings, damages, liabilities, losses, costs and expenses suffered or incurred by them, which arises out of my/our usage of CTCL Facility.
7. I/We agree that this undertaking shall be governed by the laws of India and Courts at Mumbai shall have exclusive jurisdiction in all such matters arising out of this undertaking.
8. I/we hereby agree to abide by the Bye-laws, Rules, Regulations, Circulars and/or any other amendments issued by the Exchange/ SEBI from time to time.

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

Witness 1:

Witness 2:

System Audit Report - Format
(On the letterhead of system auditor)

Date:

Name of Trading Member:

Member Id:

1. CTCL Audit Checklist (Part I)
2. IBT Audit Checklist (Part I + Part II)
3. Wireless Trading Audit Checklist (Part I + Part II + Part III)
4. Algo Audit Checklist (Part I + Part IV)
5. DMA Audit Checklist (Part I + Part V)
6. SOR Audit Checklist (Part I + Part VI)

PART I

Sr. No.	Area of Audit	Results & Observations	Auditor's Remark																					
A.	System Features & Functionality	Results	Opinions																					
1.	<p>Software Details</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Name</th> <th>Version No</th> </tr> </thead> <tbody> <tr> <td>Application software</td> <td></td> <td></td> </tr> <tr> <td>Software developed by</td> <td></td> <td>----</td> </tr> <tr> <td>Gateway/Adapter</td> <td></td> <td></td> </tr> <tr> <td>Risk Administration / Manager</td> <td></td> <td></td> </tr> <tr> <td>Front End / Order Placement / Algo Strategy</td> <td></td> <td></td> </tr> <tr> <td>Database details</td> <td></td> <td>----</td> </tr> </tbody> </table>	Particulars	Name	Version No	Application software			Software developed by		----	Gateway/Adapter			Risk Administration / Manager			Front End / Order Placement / Algo Strategy			Database details		----		
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2.	<p>The installed system features are as prescribed by MSE.</p> <p>The Member ensures that software version number is used to identify the system being approved by the Exchange.</p> <p>Price Broadcast The system has a feature for receipt of price broadcast data</p> <p>Order Processing : The system has a feature: a) Which allows order entry and confirmation of orders b) Which allows for modification or cancellation of orders placed</p> <p>Trade Confirmation: The system has a feature which enables confirmation of trades.</p>																							
3.	<p>The installed system provides a system based control facility over the order input process</p> <p>Order Entry The system has order placement controls that allow only orders matching the system parameters to be placed.</p> <p>Order Modification The system allows for modification of orders placed.</p>																							

	<p>Order Cancellation The system allows for cancellation of orders placed Order Outstanding Check The system has a feature for checking the outstanding orders i.e. the orders that have not yet traded or partially traded.</p>		
4.	<p>The installed system provides a system based control facility over the trade confirmation process</p> <p>Trade Confirmation and Reporting Feature</p> <p>Should allow confirmation and reporting of the orders that have resulted in trade</p>		
5.	<p>The installed system provides a system based control facility over the order input process</p> <p>Order Matching Does the System pass all the Orders to the trading platform of the Exchange for execution and not allow any crossing of orders that are routed through it?</p>		
6.	<p>The System generates appropriate audit logs and trails so as to facilitate tracking of events such as orders and trades with timestamp.</p>		
7.	<p>The installed system allows for placing of orders only for authorized clients</p> <p>Client ID Verification Only duly authorized client's orders are allowed to be placed.</p> <p>Proprietary order entry mechanism Order entry for Pro types of orders is executed through specific User Ids.</p> <p>The system should not in any manner suggest to the user by default the name of Exchange, Scrip and Segment etc. It is the user who should have the option to select the same.</p>		
8.	<p>The installed system has a User Management system as per the requirements of MSE.</p> <p>Approved Users: Only users approved by MSE are allowed to access the system and documentation regarding the same is maintained in the form of a) User Approval Application b) Copy of User Qualifications</p> <p>User Creation: New User IDs are created as per the CTCL guidelines.</p> <p>User ID: All users are uniquely identified through issue of unique CTCL ids.</p> <p>User Disablement: Users not compliant with the Exchange Requirements are disabled and event logs maintained</p> <p>User Deletion: Users are deleted as per the MSE guidelines</p> <p>Reissue of User Ids:</p>		

	<p>User Ids are reissued as per the MSE guidelines.</p> <p>Locked User Accounts: Users whose accounts are locked are unlocked only after documented unlocking requests are made.</p>		
9.	Whether all successful and failed login attempts are logged with details like IP address and other data to enable traceability		
B.	Risk Management System	Results	Opinions
10.	<p>The installed 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>Should allow for risk management of the orders placed and online risk monitoring of the orders being placed.</p> <p>Order Parameters There is online risk assessment of all orders placed through the system.</p>		
11.	<p>Whether the system carries out appropriate validations of the following risk parameters including Credit checks before the orders are released to the Exchange:</p> <ul style="list-style-type: none"> a) Exposure limit b) Margin limit c) Order Quantity Limits d) Order Value Limits e) Daily Price Range Checks f) Cumulative limit on value of unexecuted orders 		
12.	<p>The installed 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 systems has a provision for On-line surveillance and risk management as per the requirements of MSE and includes Number of Users Logged In / hooked on to the network incl. privileges of each</p> <p>The installed systems has a provision for off line monitoring and risk management as per the requirements of MSE and includes reports / logs on</p> <ul style="list-style-type: none"> a) Number of Authorized Users b) Activity logs c) Systems logs d) Number of active clients 		
13.	<p>The installed 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> <p>Only orders that are within the parameters specified by the risk management systems are allowed to be placed.</p>		
14.	System-based control on the pre-defined trading limits set by the Member.		
15.	<p>The installed system provides for reconfirmation of orders which are larger than that as specified by the member's risk management system.</p> <p>Whether system has a manual override facility for allowing orders that do not fit the system based risk control parameters?</p>		

16.	Facility to prompt the user when he puts in orders that are over and above the normal limits set by the Member.		
C.	Session Security	Results	Opinions
17.	Whether system has secure end-to-end encryption for all data transmission between the client and the member system through a Secure Standardized Protocol. A procedure of mutual authentication between the client and the member server is implemented?		
18.	The installed system provides for session security for all sessions established with the server by the front end application. a) The system uses session identification and authentication measures to restrict sessions to authorized user only. b) The system uses session security measures like encryption to ensure confidentiality of sessions initiated.		
19.	The installed system has provision for security, reliability and confidentiality of data through use of encryption technology, SSL or similar session confidentiality protection mechanisms a) The system uses SSL or similar session confidentiality protection mechanisms b) The system uses a secure storage mechanism for storing of usernames and passwords c) The system adequately protects the confidentiality of the user's trade data.		
D.	Password Security	Results	Opinions
20.	Does the organization's policy and procedure document have a password policy?		
21.	The installed system Authentication mechanism is as per the guidelines of the MSE a) The installed system's uses passwords for authentication. b) The system requests for identification and new password before login into the system. c) The Password is masked at the time of entry.		
22.	System authenticates user with a User Name and password as first level of security.		
23.	System mandates changing of password when the user logs in for the first time?		
24.	Automatic disablement of the user on entering erroneous password on five consecutive occasions.		
25.	The system provides for automatic expiry of passwords at the end of a reasonable duration (maximum 6 months) and re-initialisation of access on entering fresh passwords.		
26.	Prior intimation is given to the user before such expiry?		
27.	System controls to ensure that the password is alphanumeric (preferably with one special character), instead of just being alphabets or just numerical.		
28.	System controls to ensure that the changed password cannot be the same as of the last 6 passwords.		
29.	System controls to ensure that the Login id of the user and password should not be the same.		
30.	System controls to ensure that the Password should be of minimum six characters and not more than twelve characters.		
31.	User is deactivated if the same is not used for a continuous period of 12 (Twelve) months from date of last use of the account.		
32.	System allows user to change their passwords at their discretion and		

	frequency.		
33.	System controls to ensure that the Password is encrypted at member's end so that employees of the member cannot view the same at any point of time.		
E.	Infrastructure & Capacity Management	Results	Opinions
34.	System has built-in high system availability to address any single point failure.		
35.	Service has adequate bandwidth and multiple links to ensure reliability and redundancy.		
36.	Are the resources monitored, tuned and calculations made for future capacity requirements to ensure the required performance.		
37.	Adequate un-interrupted power supply for smooth operation of the System is available at the Site?		
38.	Whether backup network link is available in case of failure of the primary link to the MSE?		
39.	Firewall Whether suitable firewalls are implemented?		
40.	Anti virus Is a malicious code protection system implemented? If Yes, then Are the definition files up-to-date? Any instances of infection? Last date of virus check of entire system.		
41.	Additional Access Control Security The installed system provides a dual factor authentication system for access to the various components. Extra Authentication Security a) The systems uses additional authentication measures like smart cards, biometric authentication or tokens etc. b) The system has a second level of password control for critical features.		
F.	Backup & Recovery Procedures	Results	Opinions
42.	Does the organization's documented policy include a backup policy and procedures?		
43.	The back-up and restore systems implemented by the member is adequate to deliver sustained performance and high availability. Whether the member system has on-site as well as remote site back-up capabilities?		
44.	The Installed systems backup capability is adequate as per the requirements of the MSE for overcoming loss of product integrity. Are backups of the following system generated files maintained as per the MSE guidelines? a) At the server/gateway level b) Database c) Audit Trails Reports At the user level a) Market Watch b) Logs c) History d) Reports		

	<p>e) Audit Trails</p> <p>Are backup procedures documented and backup logs maintained?</p> <p>Are the backup logs maintained and are 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>		
G.	Business Continuity & Disaster Recovery Procedures	Results	Opinions
45.	<p>Does the Organisation have a suitable documented Business Continuity or Disaster Recovery or Incident Response process commensurate with the organization size and risk profile to ensure a high degree of availability of the installed system</p> <p>Is there any documentation on Business Continuity / Disaster Recovery / Incident Response?</p> <p>Does a BCP / DRP plan exist?</p> <p>If a BCP/DRP plan exists, has it been tested?</p> <p>Are there any documented incident response procedures?</p> <p>Are there any documented risk assessments?</p> <p>Does the installation have a Call List for emergencies maintained?</p>		
46.	<p>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 - Network / Communication Link Backup</p> <p>Is the backup network link adequate in case of failure of the primary link to the MSE?</p> <p>Is the backup network link adequate in case of failure of the primary link connecting the users?</p> <p>Is there an alternate communications path between customers and the firm?</p> <p>Is there an alternate communications path between the firm and its employees?</p> <p>Is there an alternate communications path with critical business constituents, banks and regulators?</p>		
47.	<p>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 - System Failure Backup</p> <p>Are there suitable backups for failure of any of the critical system components like</p> <ol style="list-style-type: none"> Gateway / Database Server Router Network Switch 		

	<p>Infrastructure breakdown backup Are there suitable arrangements made for the breakdown in any infrastructure components like</p> <ol style="list-style-type: none"> Power Supply Water Air Conditioning <p>Primary Site Unavailability Have any provision for alternate physical location of employees been made in case of non availability of the primary site</p> <p>Disaster Recovery Are there suitable provisions for Books and records backup and recovery (hard copy and electronic).</p> <p>Have all mission-critical systems been identified and provision for backup for such systems been made?</p>		
48.	In case of failure of Internet, the alternate channel of communication has adequate capabilities for client identification and authentication.		
H.	Operational Integrity	Results	Opinions
49.	Does the organization's policy and procedure document have an access control policy for users of the service?		
50.	<p>The installed system provides a system based access control over the server as well as the risk management and front end dealing applications while providing for security</p> <p>Access controls</p> <ol style="list-style-type: none"> The system allows access to only authorized users The system has a password mechanism which restricts access to authenticate users. 		
51.	<p>Physical Security</p> <p>Whether adequate controls have been implemented for admission of personnel into the server rooms / place where servers / hardware / systems are located and whether audit trails of all the entries/exits at the server room / location are maintained?</p>		
52.	<p>To ensure information security for the Organisation in general and the installed system in particular policy and procedures as per the MSE requirements must be established, implemented and maintained.</p> <p>Does the organization's documented policy and procedures include the following policies and if so are they in line with the MSE requirements?</p> <ol style="list-style-type: none"> Information Security Policy Password Policy User Management and Access Control Policy Network Security Policy Application Software Policy Change Management Policy Backup Policy BCP and Response Management Policy Audit Trail Policy <p>Does the organization follow any other policy or procedures or documented practices that are relevant?</p>		
53.	The Member ensures that the persons supporting the service possess		

	requisite skills for technical support, System administration and other related functions pertaining to the System.		
54.	<p>Are documented practices available for various system processes</p> <p>Day Begin</p> <p>Day End</p> <p>Other system processes</p> <ul style="list-style-type: none"> a) Audit Trails b) Access Logs c) Transaction Logs d) Backup Logs e) Alert Logs f) Activity Logs g) Retention Period h) Data Maintenance 		
55.	<p>In case of failure, is there an escalation procedure implemented?</p> <p>Day Begin</p> <p>Day End</p> <p>Other system processes</p> <p>Details of the various response procedures including for</p> <ul style="list-style-type: none"> a) Access Control failure b) Day Begin failure c) Day End failure d) Other system Processes failure 		
56.	<p>To ensure system integrity and stability all changes to the installed system are planned, evaluated for risk, tested, approved and documented.</p> <p>Planned Changes</p> <ul style="list-style-type: none"> a) Are changes to the installed system made in a planned manner? b) Are they made by duly authorized personnel? c) Risk Evaluation Process d) Is the risk involved in the implementation of the changes duly factored in? <p>Change Approval Is the implemented change duly approved and process documented?</p> <p>Pre-implementation process Is the change request process documented?</p> <p>Change implementation process Is the change implementation process supervised to ensure system integrity and continuity</p> <p>Post implementation process Is user acceptance of the change documented?</p> <p>Unplanned Changes In case of unplanned changes, are the same duly authorized and the manner of change documented later?</p>		

	In case of members self developed system SDLC documentation and procedures if the installed system is developed In-House.		
I.	Approvals, Undertaking, Policies and Other Area	Results	Opinions
57.	Insurance The insurance policy of the Member covers the additional risk of usage of system and probable losses in case of software malfunction.		
58.	Settlement of Trades The installed system provides a system based reports on contracts, margin requirements, payment and delivery obligations Margin Reports feature Should allow for the reporting of client wise / user wise margin requirements as well as payment and delivery obligations.		
59.	Database Security a) The installed system has sufficient controls over the access to and integrity of the database b) The access to the database is allowed only to authorized users / applications. c) The database is hosted on a secure platform. d) The database stores the user names / passwords securely.		
60.	Whether system has adequate safety features to ensure it is not susceptible to internal / external attacks?		
61.	Is there any other area/aspect which in the auditor's opinion is not complied with and which is significant and material in relation to the size and the nature of the operations?		
62.	Whether the required details of all the ids created in the server of the trading member, for any purpose (viz. administration, branch administration, mini-administration, surveillance, risk management, trading, view only, testing, etc) and any changes therein, have been uploaded as per the requirement of the Exchange? If no, please give details		
63.	Whether all the user ids created in the server of the trading member have been mapped to 12 digit codes on a one-to-one basis and a record of the same is maintained? If no, please give details		
J.	Software Testing Verification	Results	Opinions
64.	Verification of software testing done by Member in Exchange provided Test environment Whether member has tested the Software in Exchange provided Test Environment Details a) No. of days software has been tested by member in Exchange provided Test environment b) Member Id & User Id used by member for testing in the Exchange provided Test environment Whether any abnormalities observed in the verification of Logs, Reports, Audit Trail and Database of the tests performed by member in Exchange provided Test environment		
65.	Verification of participation by Member in Periodic Mock Trading session conducted by Exchange		

	<p>Whether member has participated in Mock Trading sessions conducted by Exchange (Minimum 1 before approval)</p> <p>Details</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Sr #</th> <th style="width: 15%;">Mock Trading Date</th> <th style="width: 15%;">Segment</th> <th style="width: 10%;">User ID</th> <th style="width: 55%;">CTCL/IBT/Wireless Trading/DMA/ALGO/SOR</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Whether any abnormalities observed in the verification of Logs, Reports, Audit Trail and Database of the tests performed by member while participating in Periodic Mock Trading session conducted by Exchange</p>	Sr #	Mock Trading Date	Segment	User ID	CTCL/IBT/Wireless Trading/DMA/ALGO/SOR							
Sr #	Mock Trading Date	Segment	User ID	CTCL/IBT/Wireless Trading/DMA/ALGO/SOR									

PART II

Sr. No.	Area of Audit	Results & Observations	Auditor's Remark
	System Features & Functionality	Results	Opinions
1.	View Order status i.e. the orders that have not yet traded or partially traded or cancelled Order Confirmation		
2.	Acceptance / rejection of an order / trade is communicated to the IBT client.		
3.	<p>Order Capture / Status should capture the following information:</p> <p>Order Id generated by the Exchange</p> <p>IBT Client ID and type of IBT Client</p> <p>Date and Time of order placement</p> <p>Scrip name / code / symbol</p> <p>Action (Buy/Sell)</p> <p>Quantity (ensure market lot)</p> <p>Order type (Regular Lot / Stop Loss or such orders as allowed by Exchange)</p> <p>Order validity (type as permitted by exchange such as Day, EOS, IOC)e</p> <p>Price (Ensure DPR -price band / circuit limit and minimum tick size as allowed by Exchange)</p> <p>Execution status</p> <p>System captures the IP address (from where the orders are originating) for all IBT orders</p>		
4.	Is the trade confirmation sent to the client via e-mail?		
5.	Can the IBT client choose the interval of receiving the e-mail?		
6.	Whether a unique identification number as prescribed by Exchange (i.e. 111111111111 in CTCL Unique number) is sent with each IBT		

	Order?		
7.	Two-factor authentication for login session has been implemented for all IBT orders emanating using Internet Protocol?		
Risk Management System		Results	Opinions
8.	Whether System-based control is implemented by the Member for the Margin, Order Quantity and Value?		
9.	IBT Member shall ensure that logic / priorities used by the Exchange are followed by the System for treating IBT Client Orders.		
Session Security		Results	Opinions
10.	In case of no activity by the IBT client, the system provides for automatic trading session logout.		
Password Security		Results	Opinions
11.	Does the organization's policy and procedure document have an access control policy for users of the service?		
12.	Whether all successful and failed login attempts are logged with details like IP address, MAC address and other data to enable traceability		
Operational Integrity		Results	Opinions
13.	The IBT member ensures that a specific email id to receive mails from IBT Clients is communicated to all clients.		
14.	Member has documented and implemented a procedure to escalate the issue if the email is not responded within one working day.		
Approvals, Undertaking, Policies and Other Area		Results	Opinions
15.	Display of Investor protection rule, Arbitration rule and rules effecting member - client relationship on approved IBT member's website.		
16.	The web site of IBT approved member provides and displays prominently hyper link to the web site/page on the web site of the MSE displaying rules/Business Rules/circulars.		

Part III

Sr. No.	Area of Audit	Results & Observations	Auditor's Remark
System Features & Functionality		Results	Opinions
1.	<p>The installed Wireless Trading system provides a system based control facility over the trade confirmation process</p> <p>Trade Confirmation and Reporting Feature</p> <p>Should allow confirmation and reporting of the orders that have resulted in trade</p> <p>As it may not be possible to give detailed information about the order status on a hand held device e.g. mobile phones, it should be ensured that minimum information may be given with addresses of the Internet web site / web page where detailed information would be available.</p>		
2.	<p>The installed Wireless Trading system provides a system based control facility over the order input process</p> <p>Order Identification Methodology</p> <p>A unique identification number for each Wireless Trading</p> <p>System captures the IP address (from where the orders are originating) for all Wireless Trading orders?</p>		
3	Whether a unique identification number as prescribed by Exchange (i.e. 333333333333 in CTCL Unique number) is sent with each Order originating from a wireless device?		

4.	Whether audit trails are provided to the user on the wireless device?		
Session Security		Results	Opinions
5.	In case of no activity by the Wireless Trading client, the system provides for automatic trading session logout.		
6.	In case of Wireless Trading whether provision has been made to lock the trading application in case of loss of the hand held device?		
7.	It must be ensured that the session login details should not be stored on the devices used for Wireless Trading.		

Part IV

Sr. No.	Area of Audit	Results & Observations	Auditor's Remark
Operational Specifications		Results	Opinions
1.	Whether all algo orders are necessarily routed through member's servers located in India?		
2.	Whether member has real-time monitoring systems to identify algorithms that may not behave as expected?		
System Features & Functionality		Results	Opinions
3.	Whether orders generated by Algo are identified as Algorithmic Trading orders while releasing to the Exchange. For identification of Algo orders, members are required to ensure that the 13th digit of CTCL Terminal Information, which indicates whether the order is generated through Algo software or not, should be '1' if order is generated through Algo software.		
Operational Integrity		Results	Opinions
4.	Whether Algo software has facility for generating and maintaining complete audit trail Logs of all trading activities is available to facilitate audit trail. Whether record of control parameters, orders, trades and data points emanating from trades executed through Algo are maintained by member. Whether all logs generated are secured from unauthorised modifications?		
5.	Whether orders generated by Algo software are offered to the market for matching and system does not allow any crossing of orders with each other that are routed through it?		
6.	Whether system has sufficient security features including password protection for User Id, automatic expiry of password at the end of a reasonable duration and reinitialisation of Access on entering fresh password? Whether registration and de-registration of users id are carried out as per the approved policy?		
7.	Whether member has procedures and arrangements to safeguard Algo from misuse or unauthorized access? Whether adequate controls have been implemented for admission of personnel into the server rooms / place where algo servers are located and whether audit trails of all the entries / exits at the server room /		

	location are maintained?		
8.	Any changes / upgrades done to the Algo software and system post approval by the Exchange.		
9.	Whether member has proper procedures, systems and technical capability to carry out trading through the use of Algo?		

Trading members who places orders using AT facility shall ensure that such orders adhere to following automated risk management checks in addition to earlier checks.

Sr. No.	Category	Risk Management Check	Description	Ratings (Strong / Medium / Weak)	Auditors Observations / Remarks
1	Individual Order Level:	Single Order Quantity check	'Fat Finger' check - Any single order does not carry abnormally large quantity beyond pre-defined limit		
2	Individual Order Level:	Single Order value check	Any single order does not carry abnormally large value beyond pre-defined limit		
3	Individual Order Level:	Price Range check	The price of any single order should not be more than the applicable price bands including dummy price bands defined by the Exchange for security/contract.		
4	System Requirements	Orders Validation	1. Only Limit orders shall be allowed. The Market orders and Immediate or cancel (IOC) orders are not allowed 2. Net Open Position Check: The quantity quoted in the order shall not violate the position limits at Member level and Client Level. (Applicable for Commodity Derivatives Segment).		
5	System Requirements	Order Identification	1. All orders generated by Algorithmic trading products are tagged with appropriate location code(s) as specified by the Exchange and such location code(s) should be registered with the Exchange. 2. All the algo orders generated shall be tagged with the Algo Id assigned by the Exchange.		
6	System Requirements	Audit Trail	The stock broker shall maintain logs of all trading activities to facilitate audit trail. The stock broker shall maintain record of control parameters, orders, trades and data points emanating from trades executed through algorithm trading.		
7	System Requirements	Orders per second	All orders generated by Algorithmic trading products are adhering to limit of maximum number of permissible orders per second as may be specified by the broker at his end.		
8	System Requirements	Automated Execution Check	Before pumping in further orders, the algo should check if the orders already released by it (executed,		

			unexecuted, unconfirmed) are sufficient with respect to strategy of the algo.		
9	System Requirements	System security	The system has sufficient security features including password protection for the user ID, automatic expiry of passwords as the end of a reasonable duration and re-initialization of access on entering fresh passwords. This functionality is verified that the system has enough security features to ensure that the access to the software is only available to authorized persons at the members end		
10	System Requirements	Dysfunctional Algos	<p>Dysfunctional algos can be broadly defined as algo that does not work as per defined logic or does not conform to the risk management checks defined by the broker or affects orderly trading and market integrity on account of its potential misfiring.</p> <p>The broker should have a automated mechanism to handle abovementioned contingencies by way of 1. monitoring the algo systems real time, 2. putting in place checks and balances at his end to identify abovementioned events and 3. taking necessary corrective action (Example - stopping the algo, observing a cooling period) -</p> <p>'Illustrative' checks that may be implemented in this regard can be as follows -</p> <ul style="list-style-type: none"> - If a position is built only on one side beyond a pre-defined level - If total cumulative order value exceeds a pre-defined limit - If total no of orders placed is beyond a pre-defined limit 		
11	System Requirements	Market Price Protection	Market Price protection provides protection to a trader to limit the risk of a market order, within a pre-set percentage of the Last Trade Price (LTP). The member shall be required to maintain and set the market price protection percentage greater than zero and less than or equal to the applicable circuit limits including dummy circuit limits in respect of all algorithmic orders. (Not application for Commodity Derivatives Segment)		

12	System Requirements	Client level checks	<p>All orders generated by Algorithmic trading products should adhere to the following risk management checks defined by the broker -</p> <p>a. The broker should define single order quantity and value checks for orders placed by the client. These checks be based on assessment of client's risk profiles done by trading members. Algo orders placed for a client should not exceed these defined limits.</p> <p>b. Cumulative value of unexecuted orders for a client placed across all terminals should not exceed threshold limit set by the trading member for that client</p>		
13	System Requirements	Cumulative Open Order Value Check	Cumulative value of all unexecuted orders placed from all terminals should not exceed threshold limit set by the trading member. This check should also be applicable for all orders generated by Algorithmic trading products.		
14	System Requirements	Net Position Vs. available margin	Algo orders are not released in breach of Net positions as against the available margin defined by the trading member for the client.		
15	Individual Order Level:	RBI Violation check for FII Restricted stocks	Algo orders are not released for security restricted by RBI from time to time. (Application for Equity Segment)		
16	Individual Order Level:	MWPL violation check	Algo orders are not released in breach of market wide position limit as defined by the Exchange for the security in respective segments. (Application for Equity/ Currency & Commodity Derivatives Segments)		
17	Individual Order Level:	Position Limit Check	Algo orders are not released in breach of position limit as defined by the trading member for the client. (Application for Equity/ Currency & Commodity Derivatives Segments)		
18	Individual Order Level:	Trading Limit Check	Algo orders are not released in breach of overall trading limits as defined by the trading member for the client.		
19	System Requirements	Exposure Limit check at individual client level and at overall level for all clients	Algo orders are not released in breach of exposure limit as defined by the trading member for the client.		
20	Individual Order Level:	Trade Price Protection	Algo orders are not released in breach of the bad trade price as		

		Check	defined by the Exchange for the security in respective segments.		
21	System Requirements	Branch value limit	Algo orders are not released in breach of branch value limit as defined by the trading member for the branch.		
22	System Requirements	Security wise limit	Algo orders are not released in breach of security-wise value limit as defined by the trading member for individual security.		
23	Individual Order Level:	Spread order Quantity and Value Limit	Spread orders generated through algorithms are not released in breach of the order quantity and value limits as defined by the trading member for spread order book. (Application for Equity/ Currency & Commodity Derivatives Segments)		
24	System Requirements	Circuit Breaker Check*	Price limit checks are ineffective for Market Orders by definition. Using a static reference price (e.g. Arrival-Mid) allows setting an ultimate price beyond which Algo will not participate. Intermittent risk checks should be built in with dynamic price reference such that there is a combination of soft and hard alerts / checks which alert the Trader and require his/her attention and intervention		
25	System Requirements	Market Depth Check*	Circuit breaker checks, whilst setting an ultimate price beyond which it will not participate, still allows Algo to participate up to and including that price. This check can specifically help better control the liquidity seeking Algorithms. Generally, in this alert, a real time order book-based check is required to ensure that no single trade impacts price significantly. Market depth checks operate to calculate how many price levels will be taken out if an order were to execute in the market. A check like Market Depth Checks should be built-in so that algorithmic orders from the Exchange are pulled out if there is not enough liquidity available up-to X% from Far Touch. Far touch is the best price on the opposite side		
26	System Requirements	Last Price Tolerance (LPT) Check*	One limiting factor of market depth checks is that the Far Touch can move rapidly, taking the Market Depth Limit along with it. Last Price Tolerance check can help Algorithm from not participating at a dislocated far touch price.		

			A check like LPT should be built-in so that if the Far Touch moves rapidly, this check can act as an additional control.		
27	System Requirements	Fair Value Check*	<p>Fair Value checks operate to prevent algorithms from following a temporary price spike by setting a secondary limit based on a short-term moving average.</p> <p>A check like this should be built in so that when exceptional volumes have trades either due to a large block/fat finger error in split seconds (fractions of second), Fair Value Check will help cancel the noise and further unintended cascading effect.</p>		

* Please note that the checks 24, 25, 26 and 27 are required to be commented if the same is applicable to the Algo, based on the individual/investor's/strategy's requirements. If no, then report as "NA".

Part V

Sr. No.	Area of Audit	Results & Observations	Auditor's Remark
	Operational Specifications	Results	Opinions
1.	Whether the Trading Member's server, routing the Direct Market Access (DMA) orders to the Exchange trading system is located in India?		
2.	Whether a unique identification number as prescribed by Exchange (i.e. 222222222222 in CTCL Unique number) is sent with each DMA Order?		
3.	Whether the DMA server application has the facility to enable & disable a DMA client?		
4.	Whether the DMA server application handles the order on first-cum-first basis across all DMA clients?		
5.	Whether the Trading Member's server application has an appropriate flag to identify separately DMA orders / trades?		
6.	Does the DMA System have a facility to maintain and retain all orders, trades, alert logs / activity logs with audit trail facility for at least 5 years?		
7.	Whether Position Limits specified for respective segment as specified by the Exchange / regulatory authorities: <ul style="list-style-type: none"> a) Market-wide across all clients b) Client-wise 		
8.	Based on the Margin requirements as set out by the Exchange from time to time, the DMA application is able to limit the Net position of a DMA client that can be outstanding.		
9.	Whether appropriate limits for securities subject to FII limits as specified by the Exchange / Regulatory authorities can be set and DMA server application will notify the DMA client and / or control such orders before release to the Exchange		
10.	Whether provision is made in the DMA application for Trading member to set any other risk parameter? If yes, please provide details		
11	Is there an adequate facility for issuing contract notes to the client within 24 hours of the trade execution?		
	Client Authorizations & Terms and Conditions	Results	Opinions

12.	Are the clients availing DMA facility authorized after fulfilling Terms and Conditions as per Exchange requirements?		
13.	Whether individual users at the client end are also authorized based on minimum criteria?		
14.	Are the Terms and Conditions as prescribed in Exchange Circular in place? Whether the Exchange prescribed Terms and Conditions and formats as prescribed in Exchange Circular has been / will be adopted? Or The Terms and Conditions and formats will be modified?		
15.	Whether the DMA application is so designed that it allows execution of designated DMA client's orders only. DMA client should not have the facility to change it to any other persons/entity?		

Part VI

Sr. No.	Area of Audit	Results & Observations	Auditor's Remark
	Operational Specifications	Results	Opinions
1.	Whether the Trading Member's server, routing the SOR orders to the Exchange trading system is located in India?		
2.	The SOR system does not release orders to venues other than the recognized stock Exchange (Specify the list of recognized Stock Exchange(s) and the market segments to which SOR release orders)		
3.	Does the SOR application handle the order on first-cum-first basis across all the clients?		
4.	Whether Member is using similar logic/ priorities as used by Exchange to treat SOR client orders.		
5.	Whether SOR facility is provided to all class of investor?		
6.	In case the client has availed SOR facility and does not want to use the same for a particular order, whether the application provides the client with this facility.		
7.	Whether SOR facility is provided for all orders, without restricting to any specific type of order. The choice of order type shall be left to the client.		
8.	Whether orders generated by SOR facility are identified as SOR orders while releasing to the Exchange. For identification of SOR orders, members are required to ensure that the 13th digit of Terminal Information, which indicates whether the order is generated through SOR software or not, It should be '2' if order is generated through Smart Order without Algo Trading. It should be '3' if order is generated through Smart Order with Algo Trading.		
9.	Order and Trade data should be readily available for query to the clients at least till the payout date of the transaction.		
10.	System ensures real time consolidation of price view based on priority of liquidity and prices prevailing in the exchanges.		
11.	The market prices are received directly from recognized stock Exchanges and are time stamped		
12.	The market prices of all the recognized stock exchanges to which the SOR facility routes orders are consolidated for applying the Best Execution Policy for routing orders		
13.	Whether the SOR application monitors best bids and offers and updates instantly as the market moves: a) Does SOR system neutral to the participating exchanges and ensure best execution policy without induced time delay etc.		

	<p>b) Does the SOR system adheres and includes necessary location ID or any such tagging specified by the Exchange from time to time.</p> <p>c) Is there a proper standard operating procedure put in place for handling request / approval process for implementing SOR within the organization.</p>		
14.	Does the SOR application have an appropriate flag to identify separately SOR orders and trades?		
Risk Management		Results	Opinions
15.	The SOR application is so designed, configured and integrated with Order Routing server (ORS) so as to route the SOR orders only through electronic / automated risk management system where the trading member sets the risk profile of the SOR client.		
16.	Whether appropriate limits for securities subject to FII limits as specified by the Exchange / Regulatory authorities can be set and SOR server application will notify the SOR client and / or control such orders before release to the Exchange		

Summary Sheet

Sr. No.	Area of Audit	Control / Processes	Compliance S / M / W	Report Reference
1	System Features & Functionality	Gateway & System Parameters		
		Application Features		
		Order Management		
2	Risk Management System	Application Features		
		System Parameters		
3	Session Security	Session Security Parameters		
		Encryption Technologies		
4	Password Security	Policies & Procedures		
		Password Implementation		
5	Infrastructure & Capacity Management	Network & Redundant Connectivity		
		Scalability		
		Dependability		
6	Backup & Recovery Procedures	Policies & Procedures		
		Backup & Archival process		
7	Business Continuity & Disaster	Policies & Procedures		

	Recovery	System Failure Backup		
		Disaster Recovery		
8	Operational Integrity	Server Room / Network Room / Information Security		
		Qualified Personnel & Problem Escalation		
		Change Management		
9	Vulnerability Assessment	Database		
		Operating System		
10	Software Testing	Testing in Exchange provided Test environment		
		Testing & participation in Exchange conducted Mock Trading		
11	Any Other area/aspect which in the auditors opinion is not complied with and which is significant and material in relation to the size and the nature of the operations			

Overall rating for the Member's software and system: _____ (S / M / W)

Note: Process Area Controls Evaluation Criteria

Control Evaluation Criteria	Description
Strong	The controls are defined as Strong if the following criteria are met Implemented controls fully comply with the stated objectives and no material weaknesses are found.
Medium	The controls are defined as Medium if the following criteria are met Implemented controls substantially comply with the stated objectives and no material weakness result in substantial risk exposure due to the non-compliance with the criteria Compensatory controls exist which reduce the risk exposure to make it immaterial vis-à-vis the non-compliance with the criteria.
Weak	The controls are defined as Weak if the following criteria are met Implemented controls materially fail to comply with the stated control objectives. Compensating controls fail to reduce the risk so as to make it immaterial vis-à-vis the non-compliance with the compliance criteria.

It is hereby confirmed and certified that system audit of the software and systems used by _____, a member of Metropolitan Stock Exchange of India Limited ('Exchange') has been conducted by me and have been found to be in compliance with the requirements stipulated by SEBI and Exchange. The software and system have capacity to meet all requirements of the Exchange and SEBI as on date.

We certify that none of the current Directors / Partners / Promoters of the member are directly or indirectly related with any of the Directors / Promoters / Partners of _____(Name of Auditing Firm) and there is no conflict of interest with respect to the member being audited.

Signature

(Name of the Auditor & Auditing firm)
CISA / DISA / CISM / CISSP Reg. No. :

Date:
Place:
Stamp/Seal:

System Auditors' Certificate
(On the letterhead of System Auditor)

To

CTCL Department

Metropolitan Stock Exchange of India Limited
(Formerly known as MCX Stock Exchange Ltd)
4th Floor, Vibgyor Towers,
Plot No. C-62, Opp.Trident Hotel,
Bandra Kurla Complex, Bandra (East),
Mumbai – 400 098.

It is hereby confirmed and certified that _____, a member of Metropolitan Stock Exchange of India Limited ('Exchange') has successfully completed the testing of all areas as laid down by the Exchange for the below mentioned 'CTCL Facility' software(s). The software and system have capacity to meet all requirements of the Exchange and SEBI as on date.

Sr#	Particulars	Details																					
1	Category	(New / Modification)																					
2	Verification of software testing done by Member in Exchange provided Test environment No. of days software has been tested by member in Exchange provided Test environment Member Id & User Id used by member for testing in the Exchange provided Test environment Whether any abnormalities observed in the verification of Logs, Reports, Audit Trail and Database of the tests performed by member in Exchange provided Test environment																						
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4	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Particulars</th> <th style="width: 30%;">Name</th> <th style="width: 30%;">Version No</th> </tr> </thead> <tbody> <tr> <td>Application software</td> <td> </td> <td> </td> </tr> <tr> <td>Software developed by</td> <td> </td> <td>----</td> </tr> <tr> <td>Gateway/Adapter</td> <td> </td> <td> </td> </tr> <tr> <td>Risk Administration / Manager</td> <td> </td> <td> </td> </tr> <tr> <td>Front End / Order Placement / Algo Strategy</td> <td> </td> <td> </td> </tr> <tr> <td>Database details</td> <td> </td> <td>----</td> </tr> </tbody> </table>	Particulars	Name	Version No	Application software			Software developed by		----	Gateway/Adapter			Risk Administration / Manager			Front End / Order Placement / Algo Strategy			Database details		----	-----
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Front End / Order Placement / Algo Strategy																							
Database details		----																					

We certify that none of the current Directors / Partners / Promoters of the member are directly or indirectly related with any of the Directors / Promoters / Partners of _____(Name of Auditing Firm) and there is no conflict of interest with respect to the member being audited.

Signature

(Name of the Auditor & Auditing firm)
CISA / DISA / CISM / CISSP Reg. No. :

Date:

Place:

Stamp/Seal:

Application for the MSE CTCL / ALGO Test Environment Facility
(To be provided on letterhead)

To
CTCL Department
Metropolitan Stock Exchange of India Limited
(Formerly known as MCX Stock Exchange Ltd)
4th Floor, Vibgyor Towers,
Plot No. C-62, Opp.Trident Hotel,
Bandra Kurla Complex, Bandra (East),
Mumbai – 400 098.

I/We (Name of ISV/ISVOI/Member) hereby apply for use of
MSE CTCL Test Environment facility.

Sr. #	Particulars	Details
1.	Test Environment Required for Segment	<input type="checkbox"/> Equity / Capital Market <input type="checkbox"/> Equity Derivatives / Futures & Options <input type="checkbox"/> Currency Derivatives
2.	API Connectivity Details	<input type="checkbox"/> Non FIX API <input type="checkbox"/> FIX API
3.	Purpose for Test Environment	<input type="checkbox"/> Software development <input type="checkbox"/> Testing of 'CTCL Facility' software of Empanelled ISV (Please provide details in Point No.5)
4.	Algo test lab facility required	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.	a) Name of Empanelled ISV b) Name and Version No. of 'CTCL Facility' Software (Provide details if applying for Testing of 'CTCL Facility' software of Empanelled ISV else NOT APPLICABLE)	
6.	Exchange Connectivity Details <ul style="list-style-type: none"> • Connectivity (Leased Line(POP)/ISDN/ Internet) • Make of Router: • Router IP Address: • Computer IP Address: • Global IP Address for Internet: (Applicable only if connectivity is Internet) 	
7.	Registered Office/ Correspondence address :	
8.	Telephone & Fax No.:	
9.	Name(s) & Designation of Authorised Signatory:	

10.	Contact details (Phone, Fax, Email) of Authorised Signatory:	
11.	Correspondence Address of Authorised Signatory:	
12.	Address of the office from where CTCL Test Environment facility will be extended:	

I / We certify that all the statements are true and correct to the best of our knowledge. We are aware that in case any of the statements are found to be incorrect or false, we are liable for disciplinary action.

I / We understand that the Exchange reserves the right to modify or withdraw this facility.

(Name of the ISV/Member)

Authorised signatory
(Name and designation)

Date:

Place: