
NATIONAL COMMODITY & DERIVATIVES EXCHANGE LIMITED

Circular to all trading and clearing members of the Exchange

Circular No. : NCDEX/TECHNOLOGY-011/2016/069

Date : April 01, 2016

Subject : Testing of Software used in or related to Trading and Risk Management

Trading and Clearing members of the Exchange are advised to refer to the SEBI circular No. CIR/CDMRD/DEICE/03/2015 dated December 11, 2015 regarding 'Testing of Software used in or related to Trading and Risk Management'. A copy of the circular is enclosed for ready reference as Annexure 1.

All members are requested to take note of the requirements stipulated therein for compliance. Necessary operational guidelines in this regard shall be provided by the Exchange through a separate circular.

For and on behalf of
National Commodity & Derivatives Exchange Limited

Anand Iyer
Chief Information Officer

For further information / clarifications, please contact

1. Customer Service Group on toll free number: 1800 26 62339
2. Customer Service Group by e-mail to: askus@ncdex.com

CIRCULAR

CIR/CDMRD/DEICE/03/2015

December 11, 2015

To,

**The Managing Directors / Chief Executive Officers
All National Commodity Derivatives Exchanges**

Sir/Madam,

**Subject: Testing of software used in or related to Trading and Risk
Management**

1. Pursuant to Section 131 of the Finance Act, 2015 and Central Government notification F.No. 1/9/SM/2015 dated August 28, 2015, all recognized associations under the Forward Contracts (Regulation) Act, 1952 are deemed to be recognized stock exchanges under the Securities Contracts (Regulation) Act, 1956 with effect from September 28, 2015. This circular applies to National Commodity Derivatives Exchanges (Exchanges) as defined in the Securities Contracts (Regulation) (Stock Exchanges and Clearing Corporations) (Amendment) Regulations, 2015.
2. Due to technological developments and innovations, currently the members of exchanges have multiple options for using software i.e. either exchange provided or in-house developed software which is being used for trading and risk management related activities.
3. In the securities market, in order to avoid any disruption like event due to malfunctioning of software used by the trading members / brokers, it was felt necessary to strengthen the process of testing of software before deployment. In this regard, based on the recommendations of Technical Advisory Committee (TAC), SEBI had specified guidelines for testing procedures vide circulars CIR/MRD/DP/24/2013 dated August 19, 2013 and circular CIR/MRD/DP/06/2014 February 07, 2014 which are made applicable to the securities market.
4. Since new software or changes to the existing software without proper testing may affect the integrity of the markets, it has been decided to make the provisions of the aforesaid circular also applicable to commodity markets. The major provisions covered are as under:
 - a. Testing of Software
 - b. Approval of Software of brokers/members

- c. Undertaking to be provided by the brokers/members
 - d. Sharing of Application Programming Interface (API) specifications by the brokers/members
 - e. Penalty on malfunction of software used by brokers/members
5. The circular shall be applicable for Exchanges with effect from April 01, 2016.
 6. The Exchanges are advised to:-
 - Make necessary amendments to relevant bye-laws/rules for the implementation of this circular
 - Communicate SEBI, the status of implementation of the provisions of this circular
 7. The circular is issued in exercise of the powers conferred under section 11(1) of the Securities and Exchange Board of India Act, 1992, to protect the interests of investors in securities and to promote the development of, and to regulate the securities market.
 8. The circular is available on SEBI website at i.e. www.sebi.gov.in.

Yours faithfully,

B J DILIP
GENERAL MANAGER
Division of Inspection and Complaints against Exchanges
Commodity Derivatives Market Regulation Department
dilipbj@sebi.gov.in



CIRCULAR

CIR/MRD/DP/ 06 /2014

February 07, 2014

To,

All Stock Exchanges.

Dear Sir / Madam,

Subject: Testing of software used in or related to Trading and Risk Management

SEBI issued circular No. CIR/MRD/DP/24/2013 dated August 19, 2013 on 'Testing of software used in or related to Trading and Risk Management'. Subsequently, SEBI has received various suggestions with regard to the requirement of software testing prescribed through the aforementioned circular.

2. After due examination of the suggestions in consultation with the Technical Advisory Committee, it has been decided to partially revise the requirements as follows:

2.1. With respect to testing of software related to (a) fixes to bugs in the software, (b) changes undertaken to the stock brokers' software / systems pursuant to a change to any stock exchange's trading system, and (c) software purchased from a software vendor that has already been tested in the mock environment by certain number of stock brokers, stock exchanges may prescribe a faster approval process to make the process of approval expeditious.

2.2. Stock exchanges may suitably schedule the requirements of mock testing, certification of test reports by system auditor(s) and the software approval process, so as to facilitate a speedy approval and a smooth transition of the stock brokers to the new / upgraded software.

2.3. With regard to changes / updates to stock broker's trading software that intend to modify the 'look and feel' and do not affect the risk management system of the stock broker or the connectivity of the trading software with stock exchange's trading system, it is clarified that mock testing and consequent system audit may not be insisted upon by the stock exchanges.

2.4. Stock exchanges shall direct their stock brokers to put in place adequate mechanism to restore their trading systems to 'production state' at



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the end of testing session so as to ensure integrity of stock brokers' trading system.

2.5. In order to ensure that stock brokers are not using software without requisite approval of the stock exchanges, stock exchanges are advised to put in place suitable mechanism to prevent any unauthorized change to the approved software.

3. Stock exchanges are directed to:

3.1. take necessary steps and put in place necessary systems for implementation of the above.

3.2. make necessary amendments to the relevant bye-laws, rules and regulations for the implementation of the above decision.

3.3. bring the provisions of this circular to the notice of the stock brokers / trading members of the stock exchange and also disseminate the same on their website.

4. This circular is being issued in exercise of powers conferred under Section 11 (1) of the Securities and Exchange Board of India Act, 1992 to protect the interests of investors in securities and to promote the development of, and to regulate the securities market.

Yours faithfully,

Maninder Cheema
Deputy General Manager
email: maninderc@sebi.gov.in



CIRCULAR

CIR/MRD/DP/24/2013

August 19, 2013

To,

All Stock Exchanges.

Dear Sir / Madam,

Subject: Testing of software used in or related to Trading and Risk Management

SEBI vide circular SEBI/MRD/Policy/SE/15864/2003 dated August 21, 2003 advised stock exchanges to obtain an undertaking in the form of an affidavit from the members of the stock exchange stating that the members as well as their sub-brokers are using only authorized software. In this regard, stock exchanges have provided testing facilities to their stock brokers / trading members to facilitate testing of the software.

2. Further, vide various circulars issued by SEBI on Internet Based Trading (IBT), Direct Market Access (DMA), Securities Trading using Wireless Technology (STWT), Smart Order Routing (SOR) and Algorithmic Trading (AT), stock exchanges have been directed to ensure that various requirements specified in such circulars, including requirements related to systems, operations, testing, etc., are implemented and the systems of stock broker / trading member facilitate orderly trading and integrity of the securities market.

3. Various incidents of malfunctioning of software used by market participants have been observed in Indian as well as foreign securities market in the recent past. Such incidents have emphasized the need for a stringent and thorough testing of software before its introduction in the securities market. This applies equally to any subsequent changes to the software used by the stock brokers / trading members.

4. SEBI has engaged in a consultative process with the stock exchanges, software vendors, system auditors and the Technical Advisory Committee (TAC) to streamline and strengthen the process of testing of software. Based on the recommendations of TAC, it has been decided that market participants shall follow the testing procedure specified hereinafter before deployment of the software.



5. For the purpose of the circular, the term 'software' shall mean electronic systems or applications used by stock brokers / trading members for connecting to the stock exchanges and for the purposes of trading and real-time risk management, including software used for IBT, DMA, STWT, SOR, AT, etc.

6. Testing of Software

6.1. In addition to the testing and approval requirements specified through various circulars issued by SEBI on IBT, DMA, STWT, SOR and AT, stock exchanges shall frame appropriate testing policies for functional as well as technical testing of the software. Such framework shall at the minimum include the following:

(i) Testing in a simulated test environment: Stock exchanges shall provide suitable facilities to market participants / software vendors to test new software or existing software that have undergone change. Subjecting the new software or existing software that have undergone change to such testing facility shall be mandatory for market participants, before putting it in use.

(ii) Mock testing

(a) Stock exchanges shall organize mock trading sessions on regular basis, atleast once in a calendar month, to facilitate testing of new software or existing software that has undergone any change of functionality, in a close-to-real trading environment. Stock exchanges shall suitably design and plan such mock trading sessions to ensure maximum participation and sufficient trading volumes for the purpose of testing.

(b) Stock exchanges shall mandate a minimum time period for such testing in the mock trading sessions.

(c) In order to improve the efficacy of the mock trading sessions, all stock brokers / trading members shall ensure that all user-ids approved for Algo trading, irrespective of the algorithm having undergone change or not, shall participate in the mock trading sessions.

(d) User Acceptance Test (UAT): The stock broker / trading member shall undertake UAT of the software to satisfy itself that the newly developed / modified software meets its requirements.

6.2. Stock brokers / trading members shall also engage system auditor(s) to examine reports of mock tests and UAT in order to certify that the tests were satisfactorily undertaken.



6.3. Stock exchanges shall monitor compliance of stock brokers / trading members, who use trading algorithm, with regard to the requirement of participation in mock trading session as mandated with this circular. In cases where stock exchanges find that the stock broker / trading member has failed to participate in such mock trading sessions, stock exchange shall call for reasons and if found unsatisfactory, shall suspend the proprietary trading rights of the stock broker / trading member for a minimum period of one trading day.

6.4. Stock exchanges shall also ensure that the system auditors examine the compliance of stock broker / trading member, who use trading algorithms, with regard to the requirement of participation in mock trading session, as mandated with this circular, and provide suitable comments in the periodic system audit report. In cases where the system audit report indicate that the stock broker / trading member has failed to participate in such mock trading sessions, stock exchange shall call for reasons from the stock broker / trading member and if found unsatisfactory, shall suspend the proprietary trading rights of the stock broker / trading member for a minimum period of one trading day.

6.5. For pre-approval / periodic system audit of Computer-to-Computer Link (CTCL) or Intermediate Messaging Layer (IML), IBT, DMA, STWT, SOR and AT, stock brokers / trading members shall engage a system auditor with any of the certifications specified vide SEBI circular dated CIR/MRD/DP/16/2013 dated May 21, 2013. While finalizing the system auditor, stock brokers / trading members shall ensure the system auditor does not have any conflict of interest with the stock broker and the directors / promoters of the system auditor are not directly or indirectly related to the current directors or promoters of stock broker / trading member.

7. Approval of Software of stock broker / trading member

7.1. Stock brokers / trading members shall seek approval of the respective stock exchanges for deployment of the software in the securities market by submitting necessary details required by stock exchange including details of software, tests undertaken and certificate / report provided by the system auditor. Stock exchange may seek additional details as deemed necessary for evaluating the application of the stock broker / trading member.

7.2. Stock exchanges shall grant approval or reject the application of the stock broker as the case may be, and communicate the decision to the stock broker / trading member within fifteen working days from the date of receipt of completed application (or within any other such time period



specified vide SEBI circulars on DMA, IBT, STWT, SOR, AT, etc.). In case of rejection of the application, the stock exchange shall also communicate reasons of rejection to the stock broker / trading member within such time period.

7.3. Before granting approval to use software in securities market, stock exchange shall ensure that the requirements specified by SEBI / stock exchange with regard to software are met by the stock broker / trading member.

8. Undertaking to be provided by stock brokers / trading members

8.1. Stock brokers / trading members shall submit an undertaking to the respective stock exchanges stating the following at the minimum:

(i) M/s (name of the stock broker / 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 / stock exchange before deployment of such new / modified software in securities market.

(ii) M/s (name of the stock broker / trading member) will ensure that approval of the stock exchange is sought for all new / modified software and will comply with various requirements specified by SEBI or the stock exchange from time to time with regard to usage, testing and audit of the software.

(iii) The absolute liability arising from failure to comply with the above provisions shall lie entirely with M/s (name of the stock broker / trading member)

8.2. Stock exchanges may include additional clauses as deemed necessary in the undertaking.

9. Sharing of Application Programming Interface (API) specifications by the stock exchange with stock brokers / trading members

9.1. API is an interface that enables interaction of software with other software and typically includes language and message format that is used by an application program to communicate with the operating system or other application program. Stock brokers / trading members and software vendors require relevant API specifications to facilitate interaction of the developed software with the systems of the stock exchanges.



9.2. Technical Advisory Committee (TAC) had engaged with stock exchanges, software vendors and stock brokers / trading members to review the framework of sharing of APIs by stock exchanges.

9.3. Based on the recommendations of the committee, it is decided that stock exchanges shall provide relevant API specifications to all stock brokers / trading members and software vendors who are desirous of developing software for the securities market, after establishing their respective credentials.

9.4. In case of refusal to share APIs, stock exchanges shall provide reasons in writing to the desirous stock brokers / trading members or software vendors within a period of fifteen working days from the date of receipt of such request for sharing of API.

9.5. Further, stock exchanges shall not selectively release updates / modifications, if any, of the existing API specifications to few stock brokers / trading members or software vendors ahead of others and shall provide such updated / modified API specifications to all stock brokers / trading members and software vendors with whom the earlier API specifications were shared.

10. Penalty on malfunction of software used by stock broker / trading member: Stock exchanges shall examine the cases of malfunctioning of software used by stock brokers / trading members and apply deterrent penalties in form of fines or suspension to the stock broker / trading member whose software malfunctioned. In addition, stock brokers / trading members shall implement various mechanisms including the following to minimize their losses in the event of software malfunction:

10.1. include suitable clauses in their agreement with the software vendors to define liabilities of software vendor and stock broker / trading member in case of software malfunction, and / or,

10.2. consider taking suitable insurance cover to meet probable losses in case of software malfunction.

11. This circular shall be effective from October 01, 2013 and shall supersede circular no. SEBI/MRD/Policy/SE/15864/2003 dated August 21, 2003. Stock exchanges are directed to:

11.1. take necessary steps and put in place necessary systems for implementation of the provisions of this circular.

11.2. make necessary amendments to the relevant bye-laws, rules and regulations for the implementation of the above decision.



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11.3. bring the provisions of this circular to the notice of the stock brokers / trading members and also disseminate the same on their website.

12. This circular is being issued in exercise of powers conferred under Section 11 (1) of the Securities and Exchange Board of India Act, 1992 to protect the interests of investors in securities and to promote the development of, and to regulate the securities market.

Yours faithfully,

Maninder Cheema
Deputy General Manager
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