DIRECT MARKET ACCESS HANDBOOK	No. 8.16-001

Relevant to	:	Rule 8.16
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POs' Circular No(s).	:	R/R 9 of 2012, R/R 8 of 2011
Refer also to Directive No(s).	:	Directive 8-001

1. Rule 8.16

(1) This Rule provides that a Participating Organisation may provide Direct Market Access if the Direct Market Access complies with the requirements stipulated by the Exchange.

(2) In discharging the obligations under the said Rule, a Participating Organisation is encouraged to adopt the best practices set out below.

1.1 DMA Handbook

The best practices in providing Direct Market Access is set out in the DMA Handbook attached as **Appendix 1**.

[End of Best Practice]

BURSA MALAYSIA SECURITIES BERHAD

DIRECT MARKET ACCESS HANDBOOK

Document Revision

Version	Author	Description of Change	Effective Date
1.00	Infrastructure Planning	• Published to the Industry on 6th Nov. 2009	9th November 2009
1.01	Infrastructure Planning	• Explanation on Section C – 4.7, 4.8 and 4.9 • Incorporate Section B – 3, 3.1 and 3.2	17th December 2009
2.0	Exchanges Operations	• Deleted Section A, B, D and E. • Revised Section C.	5th September 2011
3.0	Regulatory Policy & Advisory, Participants" Supervision, Technology & Systems	• Updated sections on Definitions and on DMA Client – Criteria and Requirements	18th September 2012

TABLE OF CONTENTS

DIRECT MARKET ACCESS HANDBOOK

BACKGROUND

The introduction of Direct Market Access ("DMA") by Bursa Malaysia Securities Bhd ("Bursa Securities") will enable direct electronic access by clients to Bursa Trade, which is the Bursa Securities‟ Automated Trading System. Connectivity to Bursa Trade via Open Application Programming Interface ("API") will provide users with flexibility and choice of front-end systems and interface solutions.

The DMA regulatory framework encompasses the Rules of Bursa Securities, directives on pretrade risk filters and the Bursa Malaysia Information Technology Security Code version 2.0 1998.

KEY OBJECTIVES

Bursa Securities is issuing herein the "Direct Market Access Handbook" ("DMA Handbook") with the following objectives:

1. To highlight key obligations of Participating Organisations ("POs") under the Rules and the directives on pre-trade risk filters in relation to DMA.

2. To provide guidance to POs in respect of practices recommended to be observed in relation to the discharge of their obligations under some of the Rules and the directives on pre-trade risk filters. Whilst not mandatory, these recommended practices are instructive of the minimum standards required to be observed by POs, which may adopt additional controls as deemed fit in relation to their DMA business.

DEFINITIONS

Unless otherwise stated, words or expressions defined in the Rules of Bursa Securities shall when used in the DMA Handbook, carry the same definition.

"Direct Market Access" or "DMA"	Rule 1.01 defines DMA as the process by which orders to buy or sell securities, or modifications or cancellations of the orders, are submitted for execution in the ATS by a Client without any intervention or keying-in by a Dealer‟s Representative.
"DMA Participant"	POs offering DMA.
"DMA Client"	Rule 1.01 defines DMA Client as a person who is allowed to key-in DMA orders under Rule 8.18.
"ASEAN Link"	An electronic trading link among Bursa Securities and other participating ASEAN exchanges.

GUIDELINE ON RISK MANAGEMENT REQUIREMENTS

1. Conditions for Connectivity of DMA Clients

1.1. Clients' knowledge of the process for the submission of DMA orders into the Exchange's order book including Laws and Rules in relation to Trading on the Malaysian Securities Market

1.1.1 Rule 8.18(1) provides that DMA Participants shall take reasonable steps to ensure that a DMA Client and persons authorised by the DMA Client have :

- knowledge of the process of entering DMA orders into the Exchange's order book;
- knowledge of the requirements in the Rules in relation to trading on the market; and
- knowledge of the relevant laws pertaining to trading on the Market

1.1.2 For the purpose of discharging its obligations under Rule 8.18(1), we recommend DMA Participants to have procedures in place to ensure that the DMA Client demonstrates that it has knowledge of the matters set out in Rule 8.18(1) (refer to paragraph 1.1.1 above). For example, the level of knowledge of DMA Clients can be assessed by asking relevant questions on the matters set out in Rule 8.18(1). The DMA Participant should also implement review procedures, such as discussions with DMA Clients and updates, to ensure that the DMA Client's required level of knowledge remains satisfactory.

In this respect, we recommend that the DMA Participant should provide its DMA Clients with information, guidance and training[1] on the following areas:

- Bursa Trade features and functionalities i.e. trading phases, market timing, matching mechanism, order types, execution conditions and instrument state[2];
- Contract specifications of products listed on Bursa Securities; and Prohibited trading practices and trading offences.

1.1.3 In relation to DMA Clients accessing Bursa Trade via Internet (refer to paragraph 1.2.2 below), a DMA Participant may rely on a confirmation from the DMA Client that the Client and the persons authorised by the Client have knowledge of the matters set out in Rule 8.18(1).

[1] The requirements for the DMA Participant to train the DMA Client in the requirements of the Exchange Rules in relation to the entry of orders and trading and other applicable requirements, and to ensure that revisions and updates to the Laws, Exchange Rules are promptly communicated to the DMA Client should be incorporated in the Agreement between DMA Participant and DMA Client. Refer paragraph 1.3.1 on Recommended Terms of Agreement.

[2] Refer to the "Participating Organisation's Trading Manual" in Bursa Malaysia's website at http://www.bursamalaysia.com/website/bm/regulation/rules/bursa_rules/downloads/bm_cir_rr2_110411.pdf under R/R 2 of 2011.

1.2. DMA Client – Criteria and Requirements

The DMA regulatory framework encompasses the Rules of Bursa Securities and the directives on pre-trade risk filters, and regulates all forms of access to Bursa Trade where there is no manual intervention by a PO. This includes direct connectivity to the DMA Participant‟s Order Management System ("OMS") server or access to Bursa Trade through the ASEAN Link to facilitate order routing and algorithmic trading by buy-side institutions (sometimes referred to as "direct access"), and internet trading to facilitate retail participation in the equities market of Bursa Securities.

1.2.1 DMA Clients Accessing Bursa Trade via an Access Device connected to a DMA Participant‟s OMS server or through the ASEAN Link

The DMA Participant should limit such access to Bursa Trade to DMA Clients which are subjected to Client Due Diligence ("CDD").

There are 2 types of CDD – simplified and enhanced. Clients of regulated nature of business may be subjected to simplified CDD whilst Clients of unregulated nature of business may be allowed to connect "directly" to the DMA Participant‟s OMS server or to access to Bursa Trade through the ASEAN Link only if enhanced CDD measures (refer paragraph 1.2.3 below) and careful consideration of the client risk profile have been carried out.

1.2.2 DMA Clients Accessing Bursa Trade via Internet

Bursa Securities envisages that Clients that access the market via internet ("Internet Clients") will comprise primarily retail clients and should be subject to enhanced CDD measures (refer paragraph 1.2.3 below), unless there are special mitigating circumstances e.g. where reliable information on the Client can be obtained publicly, or where the Client has a good track record.

Internet Clients must be connected via an additional Web server, which is connected to an OMS server. The Web server may contain enhanced security features and added risk management controls/filters.

1.2.3 DMA Client Due Diligence – Know Your Client ("KYC") Requirements

Rule 5.15 requires a PO to exercise due diligence in learning the essential facts as to the Client and its or his investment objectives and financial situation prior to the commencement of trading. The requirements to monitor and report suspicious transactions are also set out under the Anti-Money Laundering Act 2001 [3] and the Guidelines on Prevention of Money Laundering and Terrorism Financing for Capital Market Intermediaries [4] issued by the Securities Commission. In this respect, the DMA Participant must ensure that all reasonable steps are taken to ensure adherence to these KYC requirements.

[3] http://www.agc.gov.my/Akta/Vol.%2013/Act%20613.pdf
[4] Revised edition issued in January 2007 http://www.sc.com.my/eng/html/resources/guidelines/2007%20AMLAGL%20Final_1.pdf

We recommend that all reasonable steps should be taken to accurately establish the DMA Client"s business and financial background, and its" investment objectives. The DMA Participant should be assured of the financial probity of the DMA Client and that it has sufficient financial resources to meet its obligations.

Enhanced CDD should be undertaken for clients with higher risk profiles, whilst simplified CDD may be conducted for clients with lower risk profiles e.g. regulated entities. The KYC measures undertaken in relation to eligibility requirements for DMA Clients should be reviewed regularly, at least on an annual basis. Suggested and recommended data to be obtained for simplified or enhanced CDD are as follows:

Client Type	Simplified CDD	Enhanced CDD
Individual	• IC or passport • Address – residential and permanent address, if different	• IC or passport • Address – residential and permanent address, if different • Occupation • Latest 3 months' payslip or latest income tax statement or bank statement
Corporation	• Notice of registration • Constitution (if any) • Board Resolution on opening of account • Specimen signature of authorised signatories	• Notice of registration • Constitution (if any) • Board Resolution on opening of account • Specimen signature of authorised signatories • Information on the nature of business and its corporate structure • Latest audited financial statement and/or management financial statements • Latest 3 month bank statement • Power of Attorney (if applicable)

In carrying out the above, the PO should exercise due diligence and be aware of any suspicious client behaviour(s) that warrant further enquiry or probe (herein referred to as “Red Flag”). Some of the situations of Red Flag are as follows:

- a series of transactions or activities which are senseless or irrational in nature (e.g. constantly buying and selling securities at a loss)
- the client requests to pay third parties or receives funding from third parties
- the client is reluctant to co-operate in verifying his/her identity
- the client frequently makes last minute changes to payment instructions
- orders are received from persons other than the account holder.

POs should properly monitor other doubtful circumstances where clients‟ accounts may be subjected to abuse, including but not limited to cases where a few clients‟ accounts carry identical correspondence addresses.

Any unexplained information should always be investigated.

Assessments of the expected pattern of the activity of the client on a continuous basis throughout the business relationship with the client should also be considered.

1.2.4 Record of DMA Clients

The Participating Organisations should maintain the following records in respect of each client's account:

(a) date of opening of the account;

(b) client‟s financial position;

(c) name of the officer which approved the opening of the account and the date of approval;

(d) the types of transactions for which the account is approved;

(e) in respect of the transactions effected under the account, the following information –

i) particulars of all transactions including amount of commissions charged in respect of each transaction and type of transactions;

ii) current position of the account including compliance with any margin set by the Participating Organisation;

(f) the Dealer‟s Representative handling the account; and

(g) where credit facilities have been granted to the client, the information as to whether the client is a spouse, parent or child of any of the Commissioned Dealer's Representatives of the Participating Organisation.

1.3. Agreement between DMA Participant and DMA Client

Rule 8.19 stipulates that DMA Participants is deemed to be the principal in relation to all trades effected through DMA and the Exchange will not recognise the interest of any third party and that all DMA Orders are deemed as orders submitted for execution in the ATS by a Dealer‟s Representative on behalf of a client.

Rule 8.18(2) requires the DMA Participant to execute a written agreement with DMA Clients to address the following areas:

- The duties, obligations and rights of the DMA Participant and its Clients in relation to DMA; and
- The Clients‟ compliance with the Rules.

1.3.1 Recommended Terms of Agreement

The following terms are recommended to be incorporated in the written agreement between the DMA Participant and the DMA Client to ensure that crucial provisions are agreed to prior to trading, to mitigate disputes, and to empower DMA Participants to take immediate preventive and corrective measures with respect to fair and orderly trading.

- The DMA Client shall enter orders and trade in compliance with the Rules of the Exchange and other applicable regulatory requirements;
- Specific parameters defining the orders that may be entered by the DMA Client are stated, including restriction to specific instruments or size of orders, and the DMA Participant shall have the right to reject orders that do not fall within the designated parameters of authorised orders;
- The DMA Participant has the right to reject an order for any reason;
- The DMA Participant has the right to change or remove an order in the Order Book and has the right to cancel any trade by the DMA Client for any reason;
- The DMA Participant has the right to discontinue accepting orders from the DMA Client at any time without notice;
- The DMA Participant agrees to train the DMA Client in the requirements of the Exchange Rules in relation to the entry and trading of orders and other applicable requirements;
- The DMA Participant agrees to ensure that revisions and updates to Laws and Rules are promptly communicated to the DMA Client.

2. DMA Participant Internal Control Requirements

The DMA Participant shall have written policies and procedures and comply with the following internal control requirements in relation to the provision of connectivity of its OMS server to DMA Clients.

2.1 Internal Controls: Areas of Focus for DMA Participants

Whilst the fundamental requirements of effective internal control as set out in the Bursa Malaysia Guidelines for Compliance Officers (“Compliance Guidelines”) remain relevant for all POs regardless of the medium of communication or delivery, there are a few critical internal control areas in relation to DMA trading that the DMA Participant should focus on:

2.1.1 Segregation of Duties

It is stated in the Compliance Guidelines that there must be strict separation between the credit control function, and the trading, dealing and marketing functions to ensure independence, and mitigate the risk and consequences of conflicts of interests.

It is recommended for DMA Participants to segregate the DMA direct execution desk from other Agency desks to ensure confidentiality of DMA Client Orders. Anonymity, along with increased control and speed of execution are the key benefits of trading via DMA, and the DMA Participant should endeavour to maximise these features.

2.1.2 Credit Controls

It is stated in the Compliance Guidelines that POs must ensure that suitable credit limits are set for their clients. It is recommended that the CDD assessment of DMA Client‟s financial probity must be decided independently of the trading, dealing or marketing functions.

We recommend for DMA Participants to consider enforcing stricter credit control for clients requiring enhanced CDD requirements, especially in relation to overseas accounts. These may include the collection of deposits and/or collateral as guarantee of performance, restriction on total open positions.

It is recommended that credit limits and any subsequent variation of credit limits are authorised by a senior management officer of the DMA Participant who is independent of trading, dealing and marketing functions, and is not associated with the DMA Client in question.

It is stated in the Compliance Guidelines that POs must ensure that proper systems and control procedures are implemented to ensure that their clients do not trade beyond the credit limits imposed. Further, the directives on pretrade risk filters states that risk filters (automated pre-execution checks) must be undertaken for all DMA Clients‟ orders. The risk filters are covered in greater detail under paragraph 2.2 below.

2.1.3 Post-Trade Review

DMA Participants should also ensure that proper and adequate post trade risk management monitoring systems and procedures are set in place to monitor risk exposure of DMA Clients‟ trades with respect to daily net cash position, daily maximum total capital engaged, etc. DMA Participants should ensure that account activity is monitored at least on a daily basis.

In addition, we also recommend that regular analysis of trading behaviours ought to be carried out to complement CDD measures and also to detect any possibilities of market offences that may potentially arise.

2.2 Risk Filters

DMA Participants, in providing DMA services, must ensure the following principles are adhered to at all times:

a) Fair and orderly trading;
b) Prevention of trade error; and
c) Manage trade exposures / credit / counterparty risks.

DMA Participants need to install appropriate automated risk filters to help them comply with the above principles.

Each DMA Participant~~s~~ must determine what constitutes "appropriate filters" for their business. The nature and scope of the filters adopted is a matter for ~~the~~ each DMA Participant~~s~~ to determine based upon its regulatory risk profile and what the DMA Participant~~s~~ ~~are~~ is comfortable with. They have the discretion to decide and ~~impose~~implement the type of pre-trade risk filters, ~~subject to the 3 mandatory types of pre-trade risk filters prescribed in the directives and~~ including the types set out below in paragraph 2.2.1.

These risk filters, with pre-defined criteria and values, will check and screen all DMA orders before these DMA orders are executed in the ATS, for the purpose of ensuring that these DMA orders do not pose any risk to the DMA Participants and to the market.

Risk filters are intended to establish points at which DMA orders are tested and passed to the market only when pre-set conditions are met.

The DMA Participants must regularly review the risk filters set for each DMA client as the DMA Participants will be the responsible parties bearing their clients‟ risk exposure.

2.2.1 ~~Mandatory Minimum~~ Types of Pre-Trade Risk Filters

~~Subject to paragraph 2.2,~~ DMA Participants ~~must, at the very least, establish~~have the discretion to decide and implement the following types of pre-trade risk filters to screen through every DMA order prior to entry into the Exchange~~‟~~'s order book as set out in the directives on pre-trade risk filters:

i) Trade exposure risk filter
This type of filter manages the maximum exposure in which a client may trade. It may be set on the basis of gross or net or both.

ii) Order size risk filter
This type of filter manages the maximum DMA order size which a client may enter into the Exchange order book at any single time. It may be set on the basis of value in RM or in quantity (units) or both.

iii) Price limit risk filter
This type of filter manages the maximum price of DMA order which a client may enter into the Exchange order book at any single time. It may be set on the basis of percentage or tick ~~/~~(bid~~s~~/offer) away from the last traded price or reference price or in any combination.

~~The above are the minimum pre-trade risk filters that the DMA Participants must establish.~~

DMA Participants must ensure regular review is carried out to refine and adjust the pretrade risk filters and the screening process. Examples of various risk filters and how they may be implemented are set out in paragraph 3 below.

2.2.2 Filter Parameters

Filter parameters are variables set at the respective pre-trade risk filters in terms of pre-defined criteria and values responsible for the checking and screening of DMA orders. The directives on pre-trade risk filters require DMA Participants to establish policies and procedures on which to provide internal guidance on the setting of the filter parameters for the risk filters. These parameters can be changed to modify the effectiveness of the filters without changing the nature of the rule to which the filter applies. Any changes, including intra-day changes to filter parameters must be controlled, monitored, authorized and recorded properly.

DMA Participants should not give its DMA clients the same rights or capacity as granted to Dealer‟s Representative ("DR") in setting the filters parameters because they are not licensed as a DR.

2.2.3 It is recommended that the tracking and utilisation of the filters established for the purpose of checking and screening the DMA orders to be updated on real-time on-line basis.

In the event that an order is rejected by a risk filter, it is recommended that both the DMA Client and the DR should each receive a rejection notice. The DR will normally contact the DMA Client to assess how to handle the rejection. Any actions taken to manage an exception must be in accordance with the DMA Participant‟s internal control policies and procedures, and logged and appropriately documented.

2.3 Maintenance of DMA Infrastructure Activity Log

DMA Participants must establish and maintain a DMA activity log ("Log") to record all the events/activities/processes of all Users and Administrators, encompassing the full order flow.

Access to the Log shall be restricted to Administrators and any other authorised person/(s) as may be designated by the DMA Participant. Any work carried out on this Log shall be recorded with full details. The date and time references in the Log shall be that of the ATS. In relation to the above directive, the following applies:

2.3.1 Details to be Recorded in the Log

(i) References to the DMA client/Dealer‟s Representative responsible for the DMA Order;

(ii) Date and time-stamp;

(iii) Client sign-on;

(iv) Client sign-off and the manner in which the sign-off was carried out i.e. manual or automated;

(v) Order identification/sequence number;

(vi) The outcome/status of the risk filter screening;

(vii) The outcome/status of the DMA Order entering the Exchange order book;

(viii) Modifications made by DMA client to DMA Order; and

(ix) Order match confirmation received from the ATS and the notification of the same when it was made to the DMA client.

2.3.2 Recommended Practices in Storage of DMA Log and Records

The DMA Participant should ensure that DMA records can be easily retrievable by authorised personnel, stored securely and that proper back-up controls are kept. The DMA Participant must be able to produce a complete audit trail of transactions, from receipt of an order to its settlement upon request by the Exchange.

The DMA Participant should also ensure that appropriate backup of DMA records are kept with reference to recommendations of PO IT Security Code – Baseline Procedures for ITSS 6: Computer Operations, Section 6.4 “Backup Storage Media Protection”.

2.4 Error and/or Exception Handling

Refer to Item 4 of the directives on pre-trade risk filters for the requirements on risk filters‟ error and/or exception handling. We recommend that any errors, rejections and exceptions be monitored and investigated/resolved on a daily basis, and a review of the actions taken in relation to errors and/or exceptions should be undertaken by the Head of Compliance on a regular basis.

3. Examples of Pre-Trade Risk Filters That May Be Implemented

3.1 Daily Net Cash Position

The DMA Participant ABC initializes the DNCP for the Client XYZ before the start of Trading Day [Tues, Dec 16, 2008]

Order Entry & Execution

Order	Price	Qt	Side	New DNCP	Event
				RM 1,000.000	
1	RM 10.000	10	Buy	RM 900.000	Order Entry
1	RM 10.000	10	Buy	unchanged	Order Execution
2	RM 12.000	5	Sell	unchanged	Order Entry
3	RM 14.000	5	Sell	unchanged	Order Entry
2	RM 12.000	5	Sell	RM 960.000	Order Execution
3	RM 14.000	3	Sell	RM 1,002.000	Order Execution
4	USD 2.00	10	Buy	RM 930.751	Order Entry

Order Modification & Matching @ book price

5	RM 10.000	10	Buy	RM 830.751	Order Entry
5	RM 11.000	10	Buy	RM 820.751	Order Modification
5	RM 10.500	10	Buy	RM 825.751	Order Execution

Partial Matching & Order Cancellation

6	RM 5.000	20	Buy	RM 725.751	Order Entry
6	RM 5.000	5	Buy	RM 725.751	Part Execution
6	RM 5.000	15	Buy	RM 800.751	Order Cancel

3.2 Daily MAX Total Capital Engaged

The DMA Participant ABC initializes the DMTCE for the Client XYZ before the start of Trading Day [Tues, Dec 16, 2008] based on his RM 1,000 Cash + 30% of his collaterals (RM 1,500 Equities marked to market).
Equities: RM 1,500 / Warrant: RM 900

Instrument	Order	Price	Qt	Side	Client Pos/DMTCE	Event	Instr. Type
					RM 0 / RM 1,500		
Bursa	1	RM 10.000	10	Buy	RM 100.000	Order Entry	Share
TM	2	RM 15.000	20	Buy	RM 400.000	Order Entry	Share
Bursa Warrant	3	RM 1.000	1000	Buy	**REJECTED**	Order Entry	Warrant
Bursa Warrant	4	RM 1.000	500	Buy	RM 500.000	Order Entry	Warrant
Tenaga	5	RM 6.500	150	Buy	RM 1,375.000	Order Entry	Share
Bursa	6	RM 14.000	10	Sell	unchanged	Order Entry	Share
Bursa	6	RM 14.000	10	Sell	RM 1,235.000	Order Exec	Share

3.3 Max Capital Engaged per Order

The DMA Participant ABC initializes the MCEO for his client

Instrument	Order	Price	Qt	Side	Order Value	Event
Example 1					**MCEO = RM 200**	
Bursa	1	RM 10.000	10	Buy	RM 100.000	Order Entry
TM	2	RM 15.000	20	Buy	RM 300.000	**REJECTED**
Bursa	3	RM 20.000	11	Sell	RM 220.000	**REJECTED**
Example 2					**MCEO = 0.001% with RM 100,000,000**	
Genting	3	RM 27.000	5000	Buy	RM 135,000.000	**REJECTED**

3.4 % Far from Market Spread

The DMA Participant ABC set the FMS for the Client XYZ to 15% for the groups 01, 02 and 03. All the other groups are set to 20%.

Bursa	**Bid**	5.35
	Ask	5.45

Genting	**Bid**	20
	Ask	21

Instrument	Grp	Order	Price	Qt	Side	FMS Check	Accepted?
Bursa	01	1	RM 5.400	10	Buy	Price ?>Ask+15%	OK
Bursa	01	2	RM 5.450	10	Buy	Price ?>Ask+15%	OK
Bursa	01	3	RM 5.700	10	Buy	Price ?>Ask+15%	OK
Bursa	01	4	RM 6.300	5	Buy	Price ?>Ask+15%	6.30 > 6.267
Bursa	01	5	RM 5.000	5	Sell	Price ?<Bid-15%	OK
Bursa	01	6	RM 4.540	3	Sell	Price ?<Bid-15%	4.54 < 4.548
Genting	05	7	RM 16.500	8	Sell	Price ?<Bid-20%	OK
Genting	05	8	RM 15.800	3	Sell	Price ?<Bid-20%	15.80 < 16

3.5 % Far from Last Traded Price

The DMA Participant ABC set the FLTP for the Client XYZ to 15%

LTP= 5.5

Bid	**Ask**
5.35	5.45

Order	Price	Qt	Side	Check	Accepted?
1	RM 5.400	10	Buy	Price ?>LTP+15%	OK
2	RM 5.450	10	Buy	Price ?>LTP+15%	OK
3	RM 5.700	10	Buy	Price ?>LTP+15%	OK
4	RM 6.300	5	Buy	Price ?>LTP+15%	OK
5	RM 6.350	5	Buy	Price ?<LTP+15%	6.35 > 6.325
6	RM 4.540	3	Sell	Price ?<LTP-15%	4.54 < 4.675

3.6 Small Order Quantity far from Last Traded Price

The DMA Participant ABC set the FLTP for the Client XYZ to 20% and 80 shares.

LTP=	5.5	Bid	Ask	Qt=80 20%
		5.35	5.45	

Order	Price	Qt	Side	Qt triggered	Accepted?
1	RM 7.000	100	Buy	No (100 > 80)	Not checked
2	RM 3.000	100	Buy	No (100 > 80)	Not checked
3	RM 7.000	80	Sell	Yes (80 = 80)	Yes
4	RM 3.000	80	Sell	Yes (80 = 80)	No (3 < 5.5 - 20%)
5	RM 5.900	50	Buy	Yes (50 < 80)	Yes
6	RM 5.000	50	Sell	Yes (50 < 80)	Yes
7	RM 7.000	10	Buy	Yes (10 < 80)	No (7 > 5.5 + 20%)
8	RM 3.000	10	Buy	Yes (10 < 80)	Yes
9	RM 6.100	10	Sell	Yes (10 < 80)	Yes
10	RM 9.000	10	Sell	Yes (10 < 80)	Yes

3.7 Market Type Authorization

By default, all the market types are authorized for all "sponsored access" clients. If the DMA Participant wants to restrict the access for a given client, all the authorized market types have to be listed using this risk filter.

The market codes are the following:

N : Normal Market
B : Buying-in Market
O : Odd-lot Market

They should be listed separated by comma.

Examples:

DMA Participant ABC authorizes the Client XYZ trade on "N,B". In this case the client is not authorized to trade on Odd-lot.

1. The DMA Participant DEF authorizes the Client TUV trade on Normal Market only "N"

	ISIN Code	Name	Market	Status
Order on	MY**O**1818OR---	Bursa	Odd lot	Rejected
Order on	MY**I**1818-----	Bursa	Buying in	Rejected
Order on	MY**N**1818-----	Bursa	Normal	Accepted

3.8 Instrument Type Authorization

By default, all the instrument types are authorized for all "sponsored access" clients. If the DMA Participant wants to restrict the access for a given client, all the authorized instrument types have to be listed using this risk filter.

The instrument codes are the following:

O	**:**	**Ordinary share**
P	**:**	**Preference**
T	**:**	**Property Trust**
F	**:**	**Close End Fund**
W	**:**	**Warrants/TSR**
C	**:**	**Call Warrants**
L	**:**	**Loan Stocks**
N	**:**	**Loan Notes**
D	**:**	**Debentures**
B	**:**	**Bonds**
E	**:**	**ETF**

They should be listed separated by comma.

Examples:

1. The DMA Participant ABC authorizes the Client XYZ to trade on: O,P,T,F,L,N,D,B,E
   This client is not authorized to trade on Warrants and Call Warrants.

2. The DMA Participant DEF authorizes the Client TUV to trade on: N, D, B, E, O, P, T, F

	ISIN Code	Name	Market	Status

Order on	MYN2003WB---	Kulim (M)	Odd lot	Rejected

3.9 Order Technical Origin Authorization

This risk filter is set by the DMA Participant according to the agreement it has with its client. If this risk filter is not set, all the activities are authorized for a client. This risk filter must be set correctly before authorizing a client to trade via DMA.

The activities are listed below:

A : Other Front-end than Winscore
R : RSS sell order
P : PDT sell order
I : Internet Trading
J : Internet Trading RSS sell order
K : Internet Trading PDT sell order
T : Algorithmic Trading
V : Algorithmic Trading RSS sell order
W : Algorithmic Trading PDT sell order
D : Direct Market Access – Sponsored Access
E : Direct Market Access – Sponsored Access – RSS sell order
F : Direct Market Access – Sponsored Access – PDT sell order

Notes:
a) A client should not be given P.
b) A dealer should not be given D, E, F.

If you setup D for a DMA client, he won't be able to send RSS order.

Example: The DMA Participant ABC has a DMA Client XYZ, who is a PDT. Therefore, the authorized values are: W, F.
If the Client XYZ tries to send an order with the tag 9941 set to D, his order will be rejected.

Annexure 3

BEST PRACTICE GUIDELINES FOR PARTICIPATING ORGANISATIONS IN RELATION TO LIQUIDITY RISK MANAGEMENT	**No. 13.32-001**

Relevant to	:	Rule 13.32
Introduced with effect from	:	2 May 2013
Amended	:	~~N/A~~ 1 March 2018 vide R/R 3 of 2018
POs' Circular No(s).	:	R/R 3 of 2011
Refer also to Directive No(s).	:	13.32-001

~~**1. Rule 13.32**~~

~~(1) Rule 13.32 requires a Participating Organisation to maintain a cumulative net liquid asset surplus at least at the minimum level(s) as prescribed by the Exchange ("Net Surplus Requirements") at all times.~~

~~(2) In discharging the obligations under the said Rule, a Participating Organisation is encouraged to adopt the best practices set out below.~~

~~**2. Best Practice Guidelines**~~

~~The Exchange has come up with 15 key principles that form the Exchange's best practice guidelines on managing liquidity risks ("the Best Practice Guidelines"). The Best Practice Guidelines are marked as **Appendix 1** below.~~ *[Deleted]*

~~[End of Best Practice]~~

BEST PRACTICE GUIDELINES FOR PARTICIPATING ORGANISATIONS IN RELATION TO LIQUIDITY RISK MANAGEMENT	No. 13.32-001

~~**Appendix 1**~~

~~**BEST PRACTICE GUIDELINES**~~

~~Table of Contents~~

BEST PRACTICE GUIDELINES FOR PARTICIPATING ORGANISATIONS IN RELATION TO LIQUIDITY RISK MANAGEMENT	No. 13.32-001

~~1.0 Introduction to Best Practice Guidelines ("Best Practice Guidelines")~~

~~1.1 Introduction~~

~~An important step in managing liquidity risk effectively is to be able to identify manners in which a firm's activities and external influences can affect its liquidity risk profile. It is also essential to establish a common definition of "liquidity" and "liquidity risk."~~

~~Liquidity is the ability of an institution to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses. Liquidity risk is inherent in the financial intermediation process that transforms short-term liabilities into long-term assets. Liquidity risk appears in two forms, namely:~~

I. ~~Funding liquidity risk - the risk in which an institution will not be able to meet efficiently both expected and unexpected current and future cash flow and collateral needs without affecting either its daily operations or the financial condition; and~~
II. ~~Market liquidity risk - the risk that an institution cannot easily offset or eliminate a position without significantly affecting the market price due to inadequate market depth or market disruption.~~

~~As the interaction between funding and market liquidity is more critical during stressed market conditions as they are intertwined, Non-IBs should manage both funding and market liquidity in a holistic way, through established and well-thought liquidity risk measurements that prompt Non-IBs of any impending liquidity crunch.~~

~~1.2 Summary of Key Principles~~

~~There are 15 key principles contained in the Best Practice Guidelines, which will serve as guidance to Non-IBs. Those key principles were developed based on Bursa's regulatory principles which are aimed at achieving their regulatory goals and ensuring a consistent and cohesive approach to their actions and decisions. The relevant Bursa's regulatory principles are:-~~

- ~~Value-based approach~~
- ~~Risk-based approach~~
- ~~Outcome focused; and~~
- ~~Transparency.~~

~~In implementing sound liquidity risk management practices, all Non-IBs should adopt the key principles which are grouped into seven (7) categories as below:~~

- ~~Strategy and Policy~~
- ~~Organisation and Structure~~
- ~~Risk Tolerance, Ratios and Limits~~
- ~~Stress Testing and Scenario Analysis~~
- ~~Measurement~~
- ~~Monitoring and Reporting~~
- ~~Contingency Planning~~

~~1.2.1 Strategy and Policy~~

~~**Principle 1** - Non-IBs shall develop strategies, policies and practices to manage liquidity risk in accordance with the risk tolerance and maintain sufficient liquidity.~~ [1]

~~**Principle 2** - Non-IBs shall establish and document liquidity risk management strategies and ensure that it is consistent with their funding strategy.~~

~~**Principle 3** - Non-IBs shall establish and document funding strategy that contains the overall goals and objectives for short and long term funding.~~

~~1.2.2 Organisation and Structure~~

~~**Principle 4** - Non-IBs shall establish an appropriate organisational and management structure for liquidity risk. Both Non-IBs' Board of Directors ("Board") and Senior~~

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[1] ~~Sufficient Liquidity means "adequate to meet current and planned business requirements (including known contingencies) while complying with Bursa's requirements".~~

~~Management shall be responsible to ensure a robust and coherent oversight structure for liquidity risk management is established and communicated throughout the organisation.~~

~~**Principle 5 -** Non-IBs' Board shall have the ultimate responsibility for the risks and exposures incurred and for establishing a level of tolerance for risk, including liquidity risk, though it may delegate that task to certain committees.~~

~~**Principle 6 -** Non-IBs' Senior Management shall have primary responsibility to develop, establish and maintain policies and procedures that translate the goals, objectives and risk tolerances of Non-IBs into operating standards which are consistent with the liquidity risk strategy approved by the Board.~~

~~1.2.3 Risk tolerance, ratios, and limits~~

~~**Principle 7 -** Non-IBs shall clearly articulate liquidity risk tolerance that is suitable for the business strategy of the organisation and its role in the securities market.~~

~~**Principle 8 -** Non-IBs shall establish liquidity ratios and set limits to control the nature and level of liquidity risk that the entity is capable to undertake.~~

~~1.2.4 Stress Testing and Scenario Analysis~~

~~**Principle 9 -** Non-IBs shall conduct regular stress testing and scenario analysis to test the liquidity risk that they may be exposed to and also to ensure that they have adequate liquidity to cope with stressed conditions. Stress-tests results shall then be timely reported to the Non-IBs' Board, Senior Management and relevant business line managers periodically.~~

~~1.2.5 Measurement~~

~~**Principle 10 -** Non-IBs shall establish processes for measuring liquidity risk to which they are exposed to using a robust and consistent methodology.~~

~~1.2.6 Monitoring and Reporting~~

~~**Principle 11 -** Non-IBs shall establish and maintain appropriate monitoring systems to examine and manage the amount of liquidity risk to which they are exposed to, based on established strategies, policies and procedures defined by the entity.~~

~~**Principle 12 -** Non-IBs shall establish a proper management information system and reporting frequency in accordance with the business and the risks undertaken.~~

~~1.2.7 Contingency Planning~~

~~**Principle 13** - Non-IBs shall have in place a contingency plan that will address the strategy for handling unexpected events that will severely impact the entity's liquidity, including specific procedures for raising cash in emergency situations. These "Funding Action Plans" or "Contingency Financing Plans" shall detail "key tasks" that need to be performed within certain timelines. The tasks may be dependent upon the severity of the crisis at hand as outlined in a variety of scenarios.~~

~~**Principle 14** - Non-IBs shall identify and quantify funding sources and rank them by preference in its contingency funding strategies.~~

~~**Principle 15** - Non-IBs' contingency plan shall contain the procedures which will enable the plan to be executed once a contingency arises.~~

~~2.0 Scope of Best Practice Guidelines~~

~~2.1 Strategy and Policy~~

~~2.1.1 Principle 1 - Non-IBs shall develop strategies, policies and practices to manage liquidity risk in accordance with the risk tolerance and maintain sufficient liquidity.~~

~~The Board and Senior Management of the Non-IB are responsible for developing and implementing a liquidity risk management strategy in accordance with the Non-IB's risk tolerance. The strategy should include specific policies on liquidity management, for example:~~

- ~~The composition of assets and liabilities;~~
- ~~The diversity and stability of funding sources;~~
- ~~The approach to manage liquidity in different currencies, across borders, and across business lines and legal entities;~~
- ~~The approach to intraday liquidity management; and~~
- ~~The assumptions on the liquidity and marketability of assets.~~

~~The strategy should take into account liquidity needs under normal conditions as well as under periods of liquidity stress, the nature of which may be institution-specific or market-wide or a combination of the two. The strategy may include various high-level quantitative and qualitative targets. The targets that may be considered are as follows:~~

- ~~Guidelines or limits on the composition of assets and liabilities;~~
- ~~The relative reliance on certain funding sources, both on an ongoing basis and under contingent liquidity scenarios; and~~
- ~~The marketability of assets to be used as contingent sources of liquidity.~~

~~As appropriate to the nature, scale and complexity of the Non-IB's activities, the strategy shall also:~~

- ~~Set the objectives for the management of both short-term and long-term funding risk;~~
- ~~Set the objectives for the management of contingent liquidity risk;~~

- ~~Define the basis for managing liquidity (e.g. whether the liquidity is being managed on regional or central basis);~~
- ~~Set the identification of appropriate or inappropriate risk management tools;~~
- ~~Set the degree of concentrations that could potentially affecting liquidity risk, that are acceptable to the firm; and~~
- ~~Define ways of managing its aggregate foreign currency liquidity needs and its needs in each individual currency.~~

~~The Board should approve the strategy and critical policies and practices and review them at least annually. The Board shall ensure that Senior Management translates the strategy into clear guidance and operating standards (e.g. in the form of operational policies, controls or procedures).~~

~~The liquidity strategy, key policies for implementing the strategy, and the liquidity risk management structure shall be communicated throughout the organisation by Senior Management. All business units conducting activities that have an impact on liquidity shall be fully aware of the liquidity strategy and operate under the approved policies, procedures, limits and controls. The Non-IB's personnel responsible for liquidity risk management shall maintain close links with those monitoring market conditions, as well as with other personnel with access to critical information.~~

~~2.1.2 Principle 2 - Non-IBs shall establish and document liquidity risk management strategies and ensure that it is consistent with the funding strategy.~~

~~The liquidity risk management strategies shall cover the overall appetite for liquidity risk, such as tolerance that is within compliance parameter of capital adequacy frameworks for concentration and the use of approved funding instruments and markets.~~

~~The liquidity risk management strategies must complement Non-IBs' business strategies and goals and should be appropriate to the nature, scale and complexity of the institutions' activities. Other than the liquidity strategy, their liquidity risk management policy statement should include the following areas:~~

- ~~Governance and organisational structure for liquidity risk;~~
- ~~Risk tolerance and limits;~~
- ~~Liquidity risk measurement methodology;~~
- ~~Stress testing and scenario analysis;~~
- ~~Reporting and monitoring policies; and~~
- ~~Liquidity risk contingency plan;~~

~~Details on the above areas are given in the following subsections.~~

~~2.1.3 Principle 3 - Non-IBs shall establish and document funding strategy that contains the overall goals and objectives for short and long term funding.~~

~~The funding strategy shall describe how funding should be maintained under various financial conditions, covering the use of liability diversification and asset realisation. Taking into consideration correlations between sources of funds and market conditions, it should contain the strategy for maintaining funding under adverse conditions, which is where contingency planning comes in. The funding strategy shall appropriately consider different currencies, sources, geographies and inter-company funding that may exist in the Non-IBs' operation.~~

~~Non-IBs must demonstrate that these strategies and policies have been established and represented in the form of operational procedures which is ready to promptly mitigate the identified risks. Hence it is not sufficient to just establish a strategy; it also has to be fortified with according policies and guidelines as well as procedure manuals where applicable.~~

~~2.2 Organisation and Structure~~

~~2.2.1 Principle 4 - Non-IBs shall establish an appropriate organisational and management structure for liquidity risk. Both Non-IBs' Board of Directors ("Board") and Senior Management shall be responsible to ensure a robust and~~

~~**coherent oversight structure for liquidity risk management is established and communicated throughout the organisation.**~~

~~The organisational and management structure shall at least cover the following areas:~~

- ~~Have clear lines of authority and proper delegation of responsibilities;~~
- ~~Have adequate resources skilled for liquidity risk decisions either via Finance unit of the Non-IBs, or some other suitable function depending on size and nature of the Non-IBs which other units could also be responsible;~~
- ~~Should include function which responsible for the identification, measurement and monitoring of liquidity risk;~~
- ~~Support communication network between the Non-IB's personnel responsible for the identification, measurement and monitoring of liquidity risk;~~
- ~~Prompt and flexible decision making and actions; and~~
- ~~Clear segregation of functions in the management of liquidity risk.~~

~~**2.2.2 Principle 5 - Non-IBs' Board shall have the ultimate responsibility for the risks and exposures incurred and for establishing a level of tolerance for risk, including liquidity risk, though it may delegate that task to certain committees.**~~

~~The Board's role shall include approving Non-IB's liquidity risk strategy in line with the expressed risk tolerance. The Board should establish a structure for the management of liquidity risk including the allocation of appropriate senior managers who have both the authority and responsibility to undertake the firm's day-to-day liquidity management.~~

~~The Board shall be ultimately responsible for:~~

- ~~Approving the liquidity risk strategy, liquidity risk policy (including procedures) and risk appetite concerning liquidity risk;~~
- ~~Implementing an appropriate organisation and management structure for liquidity risk;~~
- ~~Monitoring the liquidity risk profile on a regular basis and at an appropriate frequency;~~
- ~~Ensuring that liquidity risks are identified, measured, monitored and controlled;~~
- ~~Ensuring that responsibilities are clearly and comprehensively defined;~~

- ~~Ensuring that liquidity risk is managed and controlled by Senior Management within the established risk management framework;~~
- ~~Reviewing contingency plans; and~~
- ~~Reviewing liquidity decisions.~~

~~2.2.3~~ **~~Principle 6 - Non-IBs' Senior Management shall have primary responsibility to develop, establish and maintain policies and procedures that translate the goals, objectives and risk tolerances of Non-IBs into operating standards which are consistent with the liquidity risk strategy approved by the Board.~~**

~~The Senior Management of Non-IBs shall develop, establish and maintain policies and procedures to manage the liquidity risk. Their responsibilities shall include:~~

- ~~Adhering to the lines of authority and responsibility defined by the Board;~~
- ~~Implementing and maintaining appropriate policies and procedures that translate the Board's approved objectives and risk tolerances into operating standards;~~
- ~~Directing the identification, measurement and monitoring of liquidity risk through the implementation of management information and other systems;~~
- ~~Ensuring effective internal controls over the liquidity risk management processes are implemented; in doing so, the managers should request regular standardised reports concerning liquidity risk and conduct regular reviews of the methods and processes used; and~~
- ~~Providing guidance on managing and aligning the whole organisation to be risk aware and etc (or risk management in general), as usually liquidity risk is an after-effect of other risk, i.e. market, credit or reputation risk.~~

~~2.3 Risk tolerance, ratios, and limits~~

~~2.3.1~~ **~~Principle 7 - Non-IBs shall clearly articulate liquidity risk tolerance that is suitable for the business strategy of the organisation and its role in the securities market.~~**

~~The liquidity risk tolerance shall be in line with its business objectives, strategic direction and overall risk appetite. In the earlier part of this document states the applicable definition of liquidity risk.~~

~~The Board is ultimately responsible for the risks and exposures incurred by a Non-IB and for establishing a level of tolerance for risk, including liquidity risk. The tolerance shall be appropriate with the Non-IB's financial condition and funding capacity which defines the level of liquidity risk that the Non-IB is willing to assume. The tolerance shall ensure that the firm manages its liquidity appropriately at all times according to the stress levels imposed by the conditions of the overall financial environment. At the same time, it is essential that the approved risk tolerance must continue to ensure that compliance to the minimum financial requirements remains uncompromised. This is in addition to complying with the current Capital Adequacy Framework prescribed under the Rules of Bursa Securities. A Non-IB, may for example, expresses its risk tolerance by quantifying its liquidity risk tolerance in terms of the level of unmitigated funding liquidity risk the Non-IB decides to take under normal and stressed business conditions. It is the Board's responsibility to approve the Non-IB's liquidity risk strategy in line with the firm's expressed risk tolerance.~~

~~2.3.2 Principle 8 - Non-IBs shall establish liquidity ratios and set limits to control the nature and level of liquidity risk that they are capable to undertake.~~

~~The minimum limits shall be prescribed, but Non-IBs may set higher standards based on their own business strategies and activities, past performance, level of earnings and capital available to absorb potential losses, as well as its tolerance for risk. It should match the nature, scale and complexity of the Non-IB itself. Suggested funding liquidity ratios and limits used by Non-IBs for liquidity risk management include[2]:~~

- ~~Target liquidity ratio;~~
- ~~Maturity mismatch limits for local and foreign currencies; and~~
- ~~Concentration limits and diversification.~~

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[2] ~~Further clarifications in Appendix 1~~

~~Limits will vary depending on the nature of Non-IBs operations and circumstances. Limits can also be tied to balance sheet ratios. For example:~~

- ~~Maximum projected cash flow shortfall tolerated for specified time period (for example, one week ahead, one month ahead, one quarter ahead);~~
- ~~Minimum ratio of liquid assets to total assets;~~
- ~~Maximum overnight borrowings to total assets; and~~
- ~~Maximum ratio of total wholesale borrowings to total assets.~~

~~Non-IBs shall also consider additional ratios or indicators to measure their ability to meet their liquidity needs, in particularly under stressful market conditions. These other indicators include amongst others, for example:~~

~~A "barometer" that measures the number of days that the firm could survive with no new sources of funding;~~
~~The "liquidation potential," measuring how a firm could meet its funding needs in the first 14 days of a stress scenario; and~~
~~A "maximum cumulative outflow" ("MCO") standard that establishes the amount of short term unsecured funds required to fund cash outflows in a stress event.~~

~~As for market liquidity, Non-IBs should determine the level of liquidity of the market, based on certain instruments held within their portfolio. Traditional measures of market liquidity or high quality liquid assets may include trade volume (or the number of trades), market turnover, bid-ask spreads and trading velocity. Additionally, liquidity is also highly dependable on various macroeconomic and market fundamentals namely, fiscal policy, market sentiment, investor's confidence etc would be key factors in determining liquidity conditions or liquidity cost which in term translates into 'Force Sale' discount factor.~~

~~The Non-IBs shall leverage on the Volume Weighted Average Price ("VWAP") in measuring the liquidity of the securities as it measures the cost of executing a single trade of limited size as well as the price impact of a trade. Furthermore, this approach is simple to calculate with data that are widely available on a real time basis.~~

~~2.4 Stress Testing and Scenario Analysis~~

~~2.4.1 Principle 9 - Non-IBs shall conduct regular stress testing and scenario analysis to test the liquidity risk that they may be exposed to and also to ensure that they have adequate liquidity to cope with stressed conditions. Stress-tests results shall then be timely reported to the Non-IBs' Board, Senior Management and relevant business line managers periodically.~~

~~Non-IBs shall simulate distress market / financial conditions and introduce hypothetical scenarios to their positions when conducting stress testing and scenario analysis, i.e., by applying various "what-ifs" scenarios on their liquidity position, in order to consider the effects both on and off balance sheet and on both assets and liabilities.~~

~~Scenario Analysis: Example of the Development of Hypothetical Scenarios~~

~~The scenarios shown in Figure 1 below shall be used as a guideline when developing hypothetical scenarios during stress testing and the spill over impact of other risk areas.~~

~~Description~~	~~Impact~~	~~Magnitude of Shocks~~
~~Scenario 1: Global Financial Crisis~~		
~~To simulate stress event where there is a local liquidity issue arising from regional / global shortage of credit, such as the 2008 / 09 global financial crisis, resulting in the increase in short-term interest rates.~~	~~Risk areas:~~ ▪ ~~Market risk, Liquidity risk.~~	▪ ~~Based on the maturity buckets as stipulated in the Bursa's Net Surplus Requirements (NSR), increase of liquidity outflow:~~ – ~~Plausible scenario, 10%; and~~ – ~~Worst case scenario, 30%~~ ▪ ~~Based on the scenario above, determine the potential shortfall required as per the compliance requirement.~~

~~**Description**~~	~~**Impact**~~	~~**Magnitude of Shocks**~~
~~**Scenario 2: Illiquid Instruments**~~		
~~To simulate stress event where there are non-tradable / illiquid instruments / securities.~~	~~Risk areas:~~ ▪ ~~Market risk, Liquidity risk.~~	▪ ~~Additional cost of executing the illiquid instruments.~~
~~**Scenario 3: Money Market Crunch**~~		
~~To simulate stress event where there is a breakdown / crunch in the money market.~~	~~Risk areas:~~ ▪ ~~Market risk, Liquidity risk.~~	▪ ~~Imbalances between the maturity dates on assets and liabilities~~ ▪ ~~Lack of adequate funding liquidity.~~

~~**Figure 1: Guidance to Hypothetical Scenarios**~~

~~Non-IBs should construct appropriate adverse scenarios and examine the results on the liquidity needs, varying degrees of stress based on among others firm-specific elements and market wide crisis. Historical market events may provide a basis for choosing appropriate scenarios but it is unlikely that such historical event will repeat again. Hence, Non-IBs are encouraged to break away from historical trends, spreads and normal market conditions when deciding on the appropriate scenarios.~~

~~Non-IBs should also consider possible changes such as effect of market's perception of the firm on its access to the markets and also market turbulence which may trigger substantial increase in the drawdown of contingent commitments.~~

~~Non-IBs should perform the following, at the minimum, to ensure that stress testing technique applied is reflective of its risk appetite and possible risk exposures:~~

- ~~Verify all relevant assumptions and model parameters periodically taking into considerations their experience in any crisis;~~
- ~~Review and modify existing stress scenarios and parameters periodically, if necessary reflecting the current market conditions or new experiences; and~~

- ~~Review entire business profile periodically to assess the need of additional stress scenarios.~~

~~Non-IBs should be guided by a clear set of internal principles in determining whether remedial actions should be taken in response to stress-testing results. The level of authority for determining remedial actions to be taken should also be clearly designated. Remedial actions recommended should be properly documented and implemented.~~

~~2.5 Measurement~~

~~2.5.1 Principle 10 - Non-IBs shall establish processes for measuring liquidity risk to which they are exposed to using a robust and consistent methodology.~~

~~In terms of funding liquidity, Non-IBs shall have in place a methodology for the comparison of cash inflows and outflows over future timeframes to calculate the cumulative net excess or deficit of funds at selected maturity dates (referred to as a maturity ladder or cash flow gap analysis). This should:~~

- ~~Robustly measure the extent of liquidity risk;~~
- ~~Be forward looking;~~
- ~~Be responsive to the dynamic nature of the institution's liquidity profile, economic and market conditions;~~
- ~~Appropriate level of sophistication for the nature, size and complexity according to the Non-IB's activities;~~
- ~~Be able to accommodate stress and scenario analysis; and~~
- ~~Be applied consistently and based on accurate data.~~

~~The maturity time bands prescribed should be reflective of the short term nature of the equity business, where the maturity time bucket is categorised as stipulated by Bursa's NSR.~~

~~The bucketing days are made up of market / trading days and calendar days.~~

~~The basis for determining the appropriate time bands for both assets and liabilities is to reference it against the contractual cash and security flows of their residual contractual maturity or when the cash flow materialises. However, adjustments are permitted for those assets and liabilities that have distinct characteristics such as roll-in and roll-out, embedded options etc in the contracts in order to indicate those said contracts as 'behavioural maturity' instead of contractual maturity. Non-IBs shall then adjust the cash flows on a behavioural basis, as the contractual maturities pertaining to some assets and liabilities do not bear close relation to their actual behavioural characteristics.~~

~~The assumptions to design the behavioural maturity profile should be reflective of the equity business and demonstrate consistency and reasonableness for each scenario / portfolio. The assumptions selected should be verified and supported by sufficient evidence, experience and performance rather than arbitrarily selected. As such, it is encouraged that the Non-IBs utilise at least one (1) year historical observation period to be used as the basis of the assumptions.~~

~~Non-IBs liquidity measurement methods shall consider:~~

- ~~Assessing Cash Inflows against Cash Outflows;~~
- ~~Determining the Liquid Value of its assets (securities or other current assets which have a ready market, or which are capable of realisation within one (1) week in relation to the Non-IBs' portfolio);~~
- ~~Measuring and forecasting cash flows for:~~
  - ~~Assets;~~
  - ~~Liabilities;~~
  - ~~Off-balance sheet commitments; and~~
  - ~~Derivatives; and~~

~~In terms of market liquidity, among the factors considered to measure[3] liquidity include:~~

- ~~Bid / ask spread;~~
- ~~Quote size;~~

~~[3] More explanation in Appendix 1~~

- ~~Volume of trade in an instrument / number of trades in that instrument;~~
- ~~Days of no price quotation, particularly bid price; and~~
- ~~Days of no transaction.~~

~~2.6 Monitoring and Reporting~~

~~2.6.1 Principle 11 - Non-IBs shall establish and maintain appropriate monitoring systems to examine and manage the amount of liquidity risk to which they are exposed to, based on established strategies, policies and procedures defined by the entity.~~

~~Non-IBs shall have a framework of policies containing specific and detailed guidelines for day-to-day monitoring of their liquidity risk, with proper communication processes in place throughout the organisation.~~

~~Non-IBs shall use appropriate reporting measures that would include documentations, approvals, internal transfer pricing and compliance. Non-IBs should document the assumptions following the maturity buckets in measuring liquidity risk and the plan in place to mitigate any identified gaps (if any) in the internally generated behavioural maturity mismatches in the relevant policy such as liquidity management policy. This is to ensure its relevancy and applicability to the Non-IBs and their business activities. All of these should be approved by Senior Management and should be reviewed regularly.~~

~~Consistent with Rule 510.3 of the Rules of Bursa Securities, Non-IBs' internal audit should present any audit findings in this regards to the Board, including any course action and / or with any corrective measures taken in order to address any non compliance or irregularities stated in the audit report. The Board shall be responsible for the submission of all documents referred to in Rule 510.3(2).~~

~~2.6.2 Principle 12 - Non-IBs shall establish a proper management information system and reporting frequency in accordance with the business and the risks undertaken.~~

~~Non-IBs shall have reporting lines and responsibilities that are clearly established and followed. Weekly reports are provided to key personnel and monthly reports are provided to the Board. Non-IBs should assign relevant personnel to hold the responsibility of compiling the relevant reports.~~

~~Non-IBs shall have a comprehensive review process including daily monitoring of funding capacity and capacity utilisation, weekly reports of the firm's balance sheet usage, and a formal quarterly review of the system conducted by an appropriate committee.~~

~~Non-IBs shall monitor their liquidity positions daily, using for example, ledger balances (supplemented with spread sheet analysis), loans and placement systems, trading systems, Cash Capital models, daily liquidity positions, and reconciliation of data and aggregate balances to the firm's financial accounting and / or regulatory reports. These are done while taking into account of the ratios being set as mentioned in the strategy section earlier.~~

~~2.7 Contingency Planning~~

~~**2.7.1 Principle 13 - Non-IBs shall have in place a contingency plan that will address the strategy for handling unexpected events that will severely impact the entity's liquidity, including specific procedures for raising cash in emergency situations. These "Funding Action Plans" or "Contingency Financing Plans" shall detail "key tasks" that need to be performed within certain timelines. The tasks may be dependent upon the severity of the crisis at hand as outlined in a variety of scenarios.**~~

~~The plans should generally focus on conserving or creating liquidity, by specifying the order in which liquidity reserves are to be accessed and any limitation or modification of trading activity. Key components of these plans include:~~

- ~~Estimating the funding requirements or potential fund erosion for material legal entities;~~
- ~~Determining the pledge value of firm collaterals; and~~
- ~~Preparing cash projections for the company's funding chain.~~

~~Non-IBs should also include estimates of additional needs for liquidity in a crisis, such as limited repurchase of long-term debt to demonstrate that the Non-IB has sufficient liquidity sources.~~

~~The contingency plan should be documented, approved and reviewed regularly. Considerations in formulating the contingency plan include:~~

- ~~Early warning indicators;~~
- ~~Contingency scenarios;~~
- ~~Triggers;~~
- ~~Contingency funding strategies; and~~
- ~~Contingency procedures.~~

~~Examples of key considerations to be used as a guideline when formulating contingency plans or identifying opportunities are:~~

- ~~Revisit business strategy;~~
- ~~Allocate and plan capital and liquid assets, including re-allocation and sourcing of alternative funding;~~
- ~~Review of trading limits or introduction of new limits (i.e. stop-loss limits, sensitivity limits);~~
- ~~Conduct supplementary stress testing;~~
- ~~Closely monitor exposures in negative outlook / vulnerable risk areas;~~
- ~~Source additional liquid assets to cope with potential negative impact arising from stressed conditions; and~~
- ~~Conduct portfolio re-balancing to avoid concentration and diversifying exposures, while also looking identifying opportunities.~~

~~Internal indicators and market indicators as warning signs~~

~~Internal indicators are Non-IB specific, such as its assets, funding costs, concentration, and cash flows. Non-IBs should identify internal indicators that can be used to warn of a potential liquidity crisis which may be driven by internal actions. Market indicators refer to warning signals picked out from the Non-IBs interaction with the market such as the clients, credit providers or counterparties.~~

~~In either case, whether through its internal indicators or market indicators, Non-IBs should establish a system for identifying and tracking such indicators to spot potential problems even at an early stage.~~

~~Observable and measurable characteristics trigger~~

~~The contingency plan should define the circumstances and specific triggers will lead the institution to put any part of its contingency plan into action. Breaches of limits for the cumulative cash flow gaps are an example of a possible trigger.~~

~~**2.7.2 Principle 14 - A Non-IB shall identify and quantify funding sources and rank them by preference in its contingency funding strategies**~~

~~The contingency plan should consider funding strategies and action plans relating to the Non-IB's assets as well as liabilities.~~

~~Non-IB's shall consider the following:~~

- ~~In times of liquidity crisis, even committed lines of credit may not be honoured;~~
- ~~Although "excess" capital may be available to the Non-IB, the amount of the cushion may diminish substantially in a time of crisis, as the firm may have higher liquidity needs and little ability to secure new funds;~~
- ~~"Downsizing the balance sheet" through the selling of assets to raise money could accelerate a Non-IB's financial deterioration by forcing sales in a weak market, thus substantially reducing proceeds; and~~
- ~~The potential impacts of the scenarios arising from the institution's secondary market credit activities such as providing underwriting facilities for the issuance of bonds.~~

~~The established contingency plans should be reviewed periodically, at least yearly, in light of market events and their impact on the firm's liquidity.~~

~~**2.7.3 Principle 15 – A Non-IB's contingency plan shall contain the procedures which will enable the plan to be executed once a contingency arises.**~~

~~The corrective action plans shall include the following:~~

- ~~Allocation of responsibilities during a funding crisis – reporting paths and responsibilities not only by function but also for each of Non-IBs' personnel needs to be defined;~~
- ~~Procedures for internal reporting and communication to enable timely decision making and monitoring;~~
- ~~Timeframes within which each action should be taken;~~
- ~~Procedures for communication with external stakeholders such as customers, analysts, shareholders and regulators;~~

- ~~Dealing with the press and the wider public – public disclosure is a crucial part of liquidity management, as market perceptions need to be managed especially during crisis situations; and~~
- ~~Before implementing any of the contingency funding procedures, the Non-IB should assess the likely impact of particular courses of action on the market's perception of the Non-IB.~~

~~Once established, the contingency plan should also be subjected to regular review and revision to ensure it remains robust over time and continues to reflect the Non-IB's changing operating circumstances.~~

~~APPENDIX 1~~

~~Further Clarification on Funding Liquidity Ratios, Limits, and Measurements.~~

~~**Target liquidity ratio** – Based on various liquidity ratios that have been established as a liquidity monitoring tool, Non-IBs should set a target for these ratios. The actual position of liquidity ratios should be compared with the targets and any breaches and follow-up action taken by management to restore the ratios should be properly documented.~~

~~**Maturity mismatch limits** – Will control the size of the cumulative net mismatch position (i.e. cumulative cash outflows exceeding cumulative cash inflows), and are usually set for short term time bands up to one month, i.e. next day, 7 days and 1 month.~~

~~**Concentration limits and diversification** – Diversification is a tool to spread risk such that the impact of the materialisation of the risk factor in one area is contained within reasonable limits or the damage in one area is offset by a positive effect in another area. Similarly, concentration is one area would normally be subjected to limits and controls to ensure the materialisation of the risk are contained. Among the diversification that can undertaken by Non-IBs include:~~

- ~~Creditor diversification - such as limiting the amount or percentage of holding of commercial paper by one investor / issuer.~~
- ~~Spreading debt maturities.~~
- ~~Diversify debt instruments – secured and unsecured.~~
- ~~Diversify markets or country of issuance.~~

BEST PRACTICE GUIDELINES FOR PARTICIPATING ORGANISATIONS IN RELATION TO LIQUIDITY RISK MANAGEMENT	No. 13.32-001

~~**Bid / ask spread** – The difference between the bid price and the asking price of the instrument. The measurement can be based on the width of the bid / ask spread, which will indicate the likelihood of a successful transaction in the market. In addition, if this factor is monitored together with the Days of no transaction, it will provide a better definitive of the illiquidity status of the instrument.~~

~~**Quote size** –In the eyes of the public, quote size of the best bid and ask prices are visible, leaving the rest of the order book invisible to market participants. However, Bursa should be able to observe the quote size, not only at the best bid and ask prices. The quantity that can be traded at the bid and ask prices helps account for the depth of the market and complements the bid / ask spread as a measure of market liquidity~~

~~**Volume of trade in an instrument / number of trades in an instrument –** These two factors may seem similar but further analysis would demonstrate that one factor highlights a better liquidity position as compared to the other. Number of trades in an instrument demonstrates better liquidity as there is more demand in comparison to a single large transaction performed on an instrument.~~

~~**Days of no price quotation** – Measures the number of days in which a certain instrument has no demand or supply, but for the purpose of measuring illiquidity, the focus would be on bid price as it constitutes the demand for the instrument.~~

~~[End of Best Practice]~~