



B3'S TRADING PROCEDURES MANUAL

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TITLE I – INTRODUCTION

SOLE CHAPTER – OBJECT

This trading procedures manual establishes **trading** procedures and technical criteria for use in the **trading environment** and the **trades** performed with **assets** and **derivatives** on the exchange market, organized over-the-counter (OTC) market and foreign-exchange market operated by B3 in accordance with B3's trading rulebook, of which this manual is an integral and supplementary part.

This trading procedures manual is complemented by the circular letters and external communications in force published by B3.

The acronyms used in this trading procedures manual and the terms in boldface, in their singular and plural forms, have the definitions and meanings specified in B3's glossary of terms and acronyms, which is independent of B3's other normative documents.

Terms generally used in the financial and capital markets, legal, economic and accounting terms, and technical terms of any nature used in this trading procedures manual have the meanings generally accepted in Brazil.

TITLE II – TRADING ENVIRONMENT

CHAPTER I – CONNECTIONS TO THE TRADING ENVIRONMENT

Authorized participants and **registered participants**, as defined in B3's trading rulebook, operate in the **trading environment** by means of **connections** established by B3.

1. GRANTING OF CONNECTIONS TO THE TRADING ENVIRONMENT

A **connection** to the **trading environment** may be granted to a **full trading participant responsible for the connection**, and where applicable to a **trading participant**, provided they meet the following conditions:

- I - Technical: compliance with all technical requirements needed to assure a proper and safe **connection** to the **trading system**, as defined by B3 in the PQO (Operational Qualification Program) guidelines.
- II - Regulatory: compliance with all rules established by B3, CVM (Securities and Exchange Commission of Brazil) and BCB (Central Bank of Brazil). In the case of a non-resident **investor**, the **full trading participant** (PNP) and **trading participant** (PN) are responsible for complying and enforcing compliance with the law in the investor's country of origin as it applies to the markets operated by B3.

Connections must be acquired, altered and canceled electronically with B3, and only by **full trading participants**, who may allow the **trading participant(s)** linked to them to use their **connections**. **Trading participants** connect to the **trading system** through one or more **full trading participants**.

2. CONTROL AND MONITORING

B3 controls and monitors the use of **connections** to ensure they comply with the trading rulebook and the provisions of this trading procedures manual.

For this purpose, B3 verifies the different categories of **connection** established in its trading rulebook and (i) the means of execution, (ii) the origin of the **connection**, (iii) the hosting location, (iv) segregation of the flow of electronic messages, and (v) conformity with the parameters required for the transmission of electronic messages, as detailed on B3's portal.

Based on the different **connection** categories, means of execution, **connection** origin and hosting location, at the time the **connection** is acquired B3 assigns an alphanumeric identification code for use in **orders** and **cross orders** sent via the **connection** in accordance with the following parameters:

#	Connection category	Means of execution	Connection origin	Hosting	Sender location
1	Full trading participant (PNP) connection	Trading desk	PNP/PN	Outside data center	BVMF
2		Conveyor			REPS
3		Responsible bank order conveyor and bank order conveyor			REPB
4		Trading desk		Co-location B3	BVMF
5		Conveyor			REPS
6		Responsible bank order conveyor and bank order conveyor			REPB
7		Trading desk	Provider	Outside data center	BVMF
8		Conveyor			REPS
9		Responsible bank order conveyor and bank order conveyor			REPB
10		Trading desk		Co-location B3	BVMF
11		Conveyor			REPS
12		Responsible bank order conveyor and bank order conveyor			REPB
13	Sponsored direct connection (DMA)		PNP/PN	Outside data center	DMA1
14				Co-location B3	COLO0/COLO1
15			Provider	Outside data center	XXXX*
16				Co-location B3	COLO0/COLO1
17			Investor	Outside data center	DMA3
18				Co-location B3	COLO0/COLO1

* Four alphanumeric characters defined by B3 must be used to identify each **provider** exclusively.

For prudential reasons, B3 does not allow the same **connection** to be shared by more than one **full trading participant** or **trading participant**, so that the flow of **orders** must be segregated for each **participant**.

B3 establishes procedures to identify the user who inserts an **order**, the **investor**, the origin of the **order** (the IP of the connection used by the **full trading participant** and **trading participant** and of the **connections** granted by them), the responsible **operations** professional (**trader**, **conveyor** or **responsible bank order conveyor**) and the **asset** or **derivative** (audit trail), storing this information for at least five years.

In the event of non-compliance with the rules for use of **connections** and/or inadequate use of **connections**, B3 may at its sole discretion take the measures provided for in its trading rulebook and this trading procedures manual.

3. CONNECTION CATEGORIES

3.1. Full trading participant connections

Full trading participant connections are authorized by B3 for **full trading participants** or **trading participants** under the responsibility of one or more **full trading participants**, and they are used to register **orders** in the **trading system** on their own behalf or on behalf of **investors**.

A **full trading participant connection** permits:

- I - Real-time reception of the market data feed;
- II - Registration, modification and cancellation of **orders**, in accordance with rules established by B3;
- III - Purchases for **blocking**, **options exercise**, and registration of forward **transactions**.

3.1.1. Means of execution of full trading participant connections

Authorized participants can access **full trading participant connections** by different means of execution to send **orders** to B3's **trading system**:

I – Trading desk

II – Order conveyor

3.1.2. Trading desk

Used by **full trading participants** or **trading participants** to register **orders** on their own behalf or on behalf of **investors**. **Orders** may be sent only by **operations** professionals who have been accredited by B3, such as **traders**.

An **order** sent by a **trader** on behalf of an **investor** characterizes the means of execution called **trading desk** and must use only the **connection** earmarked for this means of execution.

3.1.3. Order conveyor

Used by **full trading participants** or **trading participants** to register **orders** on their own behalf or on behalf of **investors**. **Orders** may be sent only by **order conveyors**, **responsible bank order conveyors** or **bank order conveyors**.

Access by a **bank order conveyor** to send **orders** and **register transactions** must be authorized by the **responsible bank order conveyor**.

3.2. Sponsored direct connections

Sponsored direct connections are used by **investors**, always under the responsibility of a **full trading participant** or **trading participant**, solely to register **orders** on their own behalf (proprietary **portfolio**) directly in the **trading system**.

A **sponsored direct connection** permits:

- I - Real-time reception of the market data feed;
- II - Registration, modification and cancellation of **orders**, in accordance with pre-trading limits set by the **full trading participant** and **trading participant**;
- III - Purchases for **blocking**, **options exercise**, and registration of forward **transactions**.

The granting of **sponsored direct connections** by **full trading participants** and/or **trading participants** requires the insertion of mandatory clauses containing the conditions established by B3 for use of these **connections** in the respective intermediation agreements entered into with their **investors**.

4. CONNECTION ORIGIN

The origin of a **connection** is identified according to the user of the Order Management System (OMS), Execution Management System (EMS), and any other **order** management systems that are directly connected to the **connection**, whether it is a **full trading participant connection** or a **sponsored direct connection**. Thus, a **connection** may have the following origins:

- I - A **full trading participant** and **trading participant**;
- II - An independent technological solution **provider**;
- III - An **investor** authorized to send **orders** only on their own behalf, exclusively in the case of a **sponsored direct connection**.

The technological infrastructure can be installed on the premises of the **full trading participant, trading participant** or **investor**, at the independent **provider's** data center, or at B3's data center.

Technological infrastructure supplied by an independent **provider** is allowed only if the provider agrees to:

- I - Sign a specific instrument governing the activity with B3;
- II - Obtain certification for the technological solution provided to **the full trading participant** and/or **trading participant**, in accordance with the procedure required by B3;
- III - Use high-availability (HA) resources to deliver the services offered, assuring the adequate functioning of its systems and links so that they can handle the volume of **transactions** performed by the **full trading participant** and/or **trading participant**;
- IV - Access B3's technological infrastructure in a contingency with at least one alternative provider-independent trading solution;
- V - Have a plan for recovery from total or partial disasters in the event that the **provider** is unavailable.

5. HOSTING LOCATION

The hosting location is the site at which the technological infrastructure that enables a **full trading participant, trading participant, provider** or **investor** to connect to the trading system is installed. It may be B3's co-location area or a different data center.

This technological infrastructure handles **order** reception and routing, market data distribution and diffusion, execution report drop copy reception and distribution, and hosted equipment monitoring.

5.1. B3's co-location area

The technological infrastructure to which only the **full trading participant, trading participant, provider** or **investor** has access is hosted in B3's co-location area. Access to the installed equipment is performed as detailed in B3's technological infrastructure access manual.

5.1.1. Leasing space in co-location area

Full trading participants, trading participants, providers and **investors** accredited and certified by B3 are authorized to lease space in the co-location area, observing the legal and regulatory restrictions applicable to their respective jurisdictions, to host the technological infrastructure for:

- I - Receiving and routing **orders** to B3's **trading system**;
- II - Receiving and distributing drop copy messages;
- III - Receiving and distributing market data;
- IV - Monitoring the equipment installed and the **transactions** executed;
- V - Other **trading**-related activities.

5.1.2. Cross-connections between different parties' racks hosted in B3's co-location area

In B3's co-location area, **cross-connections** are allowed between the following, provided all contracting parties involved give their consent:

- I - **Providers** and **investors**;
- II - **Providers** and **full trading participants**;
- III - **Providers** and **trading participants**;
- IV - **Providers** and **providers**;
- V - **Full trading participants** and **trading participants**.

The contracting parties may ask B3 to authorize the contracting and use of **cross-connections** between racks leased by:

- I - **Full trading participants**;
- II - **Trading participants**;
- III - **Investors belonging to the same business group**;
- IV - **Full trading participants and investors**;
- V - **Trading participants and investors**.

B3 analyzes these requests based on the following criteria, among others at its discretion: (i) protection of **investors**, (ii) operational needs, and (ii) mitigation of order execution risk, including the use of an additional pre-trading tool.

If a request is denied, B3 notifies the applicant by the usual means of communication.

5.1.3. Restrictions on use of cross-connections between different parties' racks hosted in B3's co-location area

Cross-connections may be used only for:

- I - **Order** reception and routing;
- II - Market data reception and distribution;
- III - Drop copy message reception and distribution;
- IV - Monitoring the equipment installed and the **transactions** executed.

6. CERTIFICATION OF TRADING SOFTWARE

The software used by **participants** to trade in the **trading environment** must be certified in accordance with the procedures required by B3, which will be subject to oversight by BSM (B3 Market Supervision) and may be monitored by verification of the software version based on a constant sequence in the access message:

M.m.R.B.

where:

M = major release with material changes to the software (new certification required)

m = minor changes such as additional functionality (new certification not required)

R = revision with improvements and bug fixes (new certification not required)

B = new build, not necessarily with changes (new certification not required)

If material changes are made to the software, the **full trading participant** or **trading participant** must apply to B3 for recertification. Nevertheless, B3 may at its discretion require recertification for such software whenever it deems necessary.

7. CONNECTIVITY TESTING

Connectivity tests must encompass all interfaces in B3's **trading environment**, such as the **trading screens** supplied by B3, **trading screens** supplied by software **providers**, market data feed channels and drop copies (copies of execution report messages). The purpose of these tests is to validate the systems, **trading** stations and **connections** of **full trading participants** and **trading**

participants connected directly to the **trading system**, permitting prior identification of problems that may affect the **trading environment** and/or **trading system**.

Full trading participants must perform morning **connectivity tests** of the **connections** that originate in their own systems or **provider** systems and are for use by **investors** who are their customers or by operations professionals.

Trading participants must perform morning **connectivity tests** of the **connections** supplied by **full trading participants** and that originate in their own systems or **provider** systems for use by **investors** or operations professionals.

Investors must perform morning **connectivity tests** of the **connections** that originate in their own systems. **Connectivity test** automation is allowed. Whoever is directly connected to B3 is responsible for daily archiving of information and evidence relating to their participation.

During connectivity testing, **full trading participants** and **trading participants** are responsible for notifying B3 immediately of any problems or failures detected.

Connectivity test instruments should not be used for systems **performance testing** during the **trading session**. B3 may at its sole discretion provide instruments for **performance testing** after the **trading session** ends.

Execution procedures and times as well as instrument codes and the specific script for **connectivity testing** are available from B3's portal.

CHAPTER II – PARTICIPANTS

1. FULL TRADING PARTICIPANTS AND TRADING PARTICIPANTS

Notwithstanding the provisions of B3's trading rulebook, the following are responsibilities of **full trading participants** and **trading participants**:

- I - Using **connections** in accordance with the terms and conditions on which they are contracted for and their operational specifications, as per the parameters available from B3's portal;
- II - Managing (authorizing, altering and excluding) password-protected access to **trading** systems to assure their use by individual users without sharing;
- III - Maintaining adequate systems and processes that enable them to receive, evaluate, refuse and accept **orders** sent by **investors** or their representatives by telephone or other voice transmission or instant messaging systems, or personally. Records must be kept of all such **order** conveyance, containing at least:
 - (a) The date, start and end time, and duration of each recording of conversations with **investors** or their representatives;
 - (b) Identification where applicable of the operations professionals who received the **orders** and registered them in the **trading environment**, with the telephone extension or equivalent;
 - (c) The type and side of the **order**;
 - (d) The **order's** validity;
 - (e) Identification of the **asset** or **derivative**, quantity, and price of the **order**, as applicable.
- IV - Maintaining a system to record transmission of **orders** by telephone or other voice systems and clearly play back recordings of conversations with **investors** or their representatives, with at least the information itemized in the previous subclause;
- V - Taking all necessary steps to assure regular maintenance and continuous monitoring of the recording system in order to keep its quality as high as possible and assure its integrity, continuous operation, complete playback and retrieval of information without insertion or editing of recordings, including at least:
 - (a) Implementation of controls that assure the integrity and completeness of the recording logs, with at least one daily backup of all recordings made by the recording system,

integrity and information retrieval tests, and safekeeping of backup files in a physically separate location for the originals;

- (b) Maintenance of a report updated daily on all occurrences involving the recording system that may impair, however partially, the recording and/or reading and retrieval of recordings, with start and end time and a detailed description of the problem, the measures taken to remedy it and its consequences;

- VI - Making available recordings of conversations with operations professionals to B3, BSM or **investors** whenever requested;
- VII - Transcribing conversations between their operations professionals and **investors** if required to do so by B3 or BSM;
- VIII - Having rules and parameters for their activities that contain at least the procedures set out in Annex I to this trading procedures manual;
- IX - Ensuring that the rules and parameters for their activities include procedures and internal controls referring to the execution of **orders** and to internal rules in conformity with the applicable regulations, sending them to B3 and BSM at least five business days before they or amendments to them are due to enter into effect, and observing CMN's (National Monetary Council) rules on the implementation of internal controls by institutions authorized to operate by BCB;
- X - Publishing the rules and parameters for their activities on their websites before they are due to enter into force, and notifying their investors of any amendments in the manner previously established in their rules and parameters;
- XI - Safekeeping forward contracts and documents serving as proof of all **ex-pit trades** for at least five years from the date of **settlement**, and making them available to B3 and BSM for analysis whenever necessary;
- XII - Obtaining a statement of informed consent from all non-resident **investors**, especially **investors** based in the United States of America (U.S. Persons) and in the case of products subject to CFTC oversight, warranting:
 - (a) The **investor's** consent and submission to the jurisdiction of CVM, BCB and the relevant foreign regulators, as applicable;
 - (b) Express permission, in compliance with Supplementary Law 15/2001, for B3 to send information (full name and home country address, CVM code and NFA ID or other codes

identifying the **investor**, as applicable, and details of **transactions** performed) to regulators in Brazil and elsewhere for the purposes of complying with regulatory requirements;

- XIII** - Ensuring that non-resident **investors** trade only authorized products in compliance with the applicable domestic and foreign legislation and regulations, and to this end deploying means to monitor such **investors** and prevent **registration of orders** for unauthorized products by setting **trading limits**;
- XIV** - Implementing the necessary measures to ensure that **investors'** registration details are kept up to date and presented to B3 and BSM whenever requested;
- XV** - Signing trading intermediation agreements or the equivalent with their **investors**, including non-residents, with at least the information specified in Annex II to this trading procedures manual;
- XVI** - Ensuring that foreign institutions that act as intermediaries use adequate practices for the identification and **registration** of non-resident **investors** in accordance with the applicable legislation in their countries of origin;
- XVII** - Setting **trading limits** for **investors** in accordance with the parameters defined by B3.

When **trading participants** are involved, they are responsible for the obligations stipulated in items XIV, XV, XVI and XVII. Otherwise **full trading participants** and **trading participants** are jointly responsible for the fulfillment of these obligations.

2. MARKET MAKERS

2.1. Registration

Brazilian and foreign legal entities and exclusive investment funds that comply with 2.1.1 below are eligible to apply for registration as **market makers**.

2.1.1. Exclusive investment funds

Exclusive investment funds may act as **market makers** only if the sole shareholder and fund manager are the same financial institution or financial institutions that belong to the same business conglomerate. If the fund manager is also the fund administrator, the sole shareholder or another financial institution in the same business conglomerate must be responsible for administration of the fund.

The bylaws of exclusive funds must provide for their activity as market makers, clearly defining their intentions and purposes in performing this activity.

The obligations and responsibilities inherent in the activity of market makers, as established in B3's trading rulebook, this trading procedures manual and the applicable regulations, apply to the administrator and single shareholder responsible for management of the exclusive fund, or to the manager and single shareholder if the administrator is not responsible for its management, and they are deemed effectively responsible for sending **market maker**-related **orders**.

2.2. Market maker accreditation

After **registration**, **market makers** must request accreditation to act as **market makers** for specific **assets** and **derivatives** or for B3's programs involving groups of **assets** and/or **derivatives**.

The documentation required for accreditation, which must be filed with B3's Electronic Trading Department, is specified in the guide to **market maker** accreditation procedures, available from B3's portal.

Each accreditation request is examined by B3's credit risk committee, which may require additional documentation to prove that the applicant has the operational infrastructure and financial capacity to act as a **market maker** in the **asset**, **derivative** or program concerned.

If accreditation is denied, the applicant may appeal to B3's Chief Operating Officer (COO) within ten calendar days of receiving notice of the denial.

A specific procedure is followed for **market maker** accreditation in each **asset** and/or **derivative**, depending on whether the institution applies for accreditation as (i) an independent **market maker**; (ii) an independent market maker accredited for one or more of B3's programs; or (iii) a contracted **market maker**.

2.2.1. Independent market makers

Institutions that apply for accreditation as independent **market makers** must file with B3 a signed application form specifying the **assets** and/or **derivatives** for which they wish to be accredited as **market makers**.

B3 sets limits for the mandatory entry of **bids** and **asks** and defines criteria for fulfillment of **orders** and other parameters applicable to the **assets** and/or **derivatives** concerned, including without limitation the spread, minimum lot and minimum activity period during each **trading session**, as applicable.

Independent **market makers** must begin acting as such not more than thirty (30) days after approval of their accreditation application. Competitive bidding procedures are permitted to contract **market makers** for specific **assets** or **derivatives**. The maximum number of **market makers** authorized to act as such for each type or class of **asset** and **derivative** can be found on B3's portal.

2.2.2. Independent market makers accredited for B3's programs

Independent **market makers** may request accreditation for the market making programs launched from time to time by B3 to foster liquidity in certain **assets** and/or **derivatives**.

B3's market making programs are announced on its portal, which lists the **assets** and/or **derivatives** covered by each program, the parameters for market making activity in each case and other relevant information such as obligations, requirements and conditions.

Market makers may receive remuneration and/or benefits from B3 in the form of a monetary consideration, discounts and/or exemption from payment of exchange fees and trade registration fees, in accordance with the specifications of each program for which they are accredited.

The procedures for accreditation for B3's market making programs are detailed in the guide to **market maker** accreditation procedures.

2.2.2.1. Parameters for market making activity in B3's programs

Market makers accredited for B3's programs must make daily **bids** and **asks** for the **assets** and/or **derivatives** covered by the program in accordance with the respective parameters, which include without limitation: (i) spread; (ii) minimum lot; (iii) minimum activity during a trading session; (iv) mandatory contract months; and (iv) activity months.

B3 may change the activity parameters after the onset of a program, notifying the institutions concerned via the same means of communication as those used to announce the accreditation process for the program in question.

B3 may specify the maximum number of parameter breaches permitted before accreditation for a program is canceled. Only unjustified breaches or those for which the justification is not accepted by B3 will be considered for this purpose.

2.2.3. Contracted market makers

Market makers may be contracted (i) by the **issuer** of an **asset** or by its parent company or one of its subsidiaries or affiliates, or (ii) by any holder of the **assets** or **derivatives** for which it is a **market maker**.

2.2.3.1. Minimum contents of market maker service agreements

The service agreement entered into by and between a **market maker** and the contracting party must include clauses containing at least the following contents:

- I - The object of the agreement, specifying the **assets** and/or **derivatives** concerned, their tickers, and the market in which the **market maker** is to trade;
- II - Activity parameters to be respected by the **market maker**, including without limitation the minimum lot, maximum **spread** and minimum activity period during each **trading session**;
- III - Whether any remuneration, commission or fee is to be paid to the **market maker** for providing the service;
- IV - Whether there is an agreement between the **market maker** and contracting party governing the exercise of voting rights if equities are the object of the **market maker's** activity;
- V - Whether there is an agreement between the **market maker** and contracting party governing the purchase and sale of **assets** issued by the latter;
- VI - An undertaking by the market maker and contracting party that they will comply with B3's trading rules and this trading procedures manual as well as all of B3's other regulations and operating procedures and other applicable regulations;
- VII - The responsibilities and obligations of the **market maker** and contracting party;
- VIII - The conditions for termination of the agreement;
- IX - The term of the agreement;
- X - The parties' obligation to give B3 notice of at least thirty (30) days in advance of the end of the **market maker's** activity if the **market maker** is disaccredited and/or the agreement is terminated early.

B3 analyzes all agreements between **market makers** and their contracting parties to verify compliance with the provisions of this trading procedures manual, B3's trading rulebook and the applicable regulations. If this analysis detects the absence of any of the above minimum clauses or any other failure to comply with this trading procedures manual, B3's trading rulebook and/or the applicable regulations, B3 will notify the **market maker** in question so that the agreement can be amended to assure compliance before it begins acting as **market maker** for the **asset** and/or **derivative** concerned.

The activity parameters defined in any agreement between a **market maker** and its contracting party, especially the parameters mentioned in item II above, must be approved by B3 before the agreement is signed. B3 may set limits for the mandatory entry of **bids** and **asks** for the **assets** and/or **derivatives** covered by such agreements, and criteria for the fulfillment of **orders**.

From time to time B3 may review activity parameters at its sole discretion to align **market maker** activity with its objectives.

2.3. Intermediaries

If a **market maker** is not a **full trading participant**, it must designate a **full trading participant** as its intermediary, which will also be responsible for the **market maker's** activity. **Market makers** may designate a different intermediary for each new accreditation but only one intermediary per accreditation for **assets**, **derivatives** or B3's programs.

The intermediary must sign and be properly identified in each accreditation instrument, whereby it undertakes to discharge all obligations relating to the **market maker's** activity except those deriving from the **market maker's** performance.

If a **market maker** replaces a **full trading participant** as its intermediary, the replacement must be formalized via the signature of an addendum to the accreditation instrument. The **market maker** must file the addendum with B3 at least five days before the new intermediary starts operating as such, and the intermediary that is to be replaced must intermediate the **market maker's** trades until the new intermediary takes over.

Substitution of a **full trading participant** is conditional on compliance with the requisite operating procedures and confirmation by B3 of the starting date for the new intermediary's activity.

2.4. Activities

Market makers must conduct their activities in strict compliance with the applicable regulations and maintain high ethical standards in their activities as **market makers** and in all other activities associated with the markets operated by B3.

Market makers must not conduct their activities in such a way as to create artificial demand, supply or pricing conditions for the **assets** and/or **derivatives** concerned and must not use unfair practices.

B3 supervises the activities of **market makers** to verify such compliance.

2.4.1. Activity parameters

In performing their activities **market makers** must observe the following parameters defined by B3:

- I - Minimum lot: multiples of round lots – every **bid** and **ask** must be based on the minimum lot;
- II - Maximum **spread**: the maximum difference between **bids** and **asks** for the **asset** or **derivative**, expressed as a percentage or absolute number, or in terms of volatility;
- III - Minimum **activity**: the minimum percentage of each **trading session** during which the **market maker** must trade in order to comply with the parameters.

To alter the activity parameters, the **market maker** must file a formal request in accordance with the procedure established in the guide to **market maker** accreditation procedures and, if the request is approved, (i) file a new accreditation instrument with B3 in the case of a **market maker** program offered by B3, or (ii) file an addendum to the service agreement in the case of a contracted **market maker**.

For the cases mentioned above, alterations to the parameters will occur only by approval and on the date stipulated by B3.

Market makers must operate during the **trading session** in the period(s) determined by B3, excluding where applicable the **opening call**, **intermediate call**, **closing call** and any **auctions** to which the **asset** and/or **derivative** is submitted.

For an **asset** or **derivative** whose **underlying** is traded abroad or that is referenced to an **asset** or **derivative** traded abroad, the **market maker** must comply with the activity parameters established in this trading procedures manual only when the **underlying** or reference for the **asset** or **derivative** is traded in its market of origin abroad.

The occurrence of holidays in a **market maker's** home country will not be accepted as a justification for being dispensed from its obligations.

B3 may at its sole discretion authorize a **market maker** to perform its activities without observing the activity parameters in the following situations:

- I - A significant change in the volatility patterns or prices of the **assets** and/or **derivatives** for the program in the markets where the **market maker** operates;
- II - Technological hitches or problems with the **connection** to the trading system used by the **market maker** or, where applicable, the **full trading participant** that acts as its intermediary, provided evidence is filed as proof of the problems in question;
- III - Unforeseen circumstances or force majeure resulting in a technical shutdown of the **market maker** or, where applicable, of the **full trading participant** that acts as its intermediary;
- IV - The holding of **auctions** for **assets** and/or **derivatives** in the program, or their underlying **assets** and/or **derivatives**.

B3 may also at its sole discretion waive a **market maker's** obligations in exceptional circumstances that include without limitation those specified in I-IV above.

If a **market maker** fails to comply with the activity parameters established for the **assets** and/or **derivatives** in the program, B3 will notify the **market maker** concerned in writing, and the **market maker** must file a justification for the breach within three days of receiving the notice.

2.4.2. Asset and derivative quotations

If the quotation of an **asset** and/or **derivative** for which an institution is a **market maker** is less than one Brazilian Real (BRL1.00) for thirty (30) consecutive **trading sessions**, the maximum **spread** for the **market maker** may be set at an absolute value, if so requested by the **market maker** and approved by B3.

Market makers may request a change of the maximum **spread** to a percentage if the quotation remains above BRL1.00 for at least six months or if the **issuer** takes appropriate steps to bring the **quotation** into line with the provisions of B3's issuer manual, whichever occurs first.

2.4.3. Market maker activities in PTOs and OPACs

Market makers are not required to trade in the five **trading sessions** preceding a PTO (Public Tender Offer) or OPAC (Public Tender Offer for Investment Fund Units) **auction**, with regard to the **assets** involved in the PTO or OPAC or the **derivatives** referenced to them.

In the case of a PTO or OPAC that does not entail cancellation of the **issuer's registration** or cancellation of the **issuer's** listing on B3, the **market maker** must resume its activities within five days of the PTO or OPAC **auction**.

2.4.4. Dispensation from activities

Market makers must immediately notify B3's Electronic Trading Department if they are unable to comply with the rules established by B3's trading rulebook and this trading procedures manual, presenting a suitable justification and the consent of the **full trading participant**, if applicable.

Notice can be given by means of a recorded telephone call, provided formal written notice is filed within one business day.

The Director of Electronic Trading may accept the justification submitted, granting the **market maker** a dispensation from its mandatory activities in one or more **trading sessions**.

If the justification is not accepted, and if any **market maker** fails to perform its mandatory activities without justification, the **market maker** concerned will be notified and will be subject to the penalties established by B3's trading rulebook and this trading procedures manual.

If a **market maker** is unable to perform its activities owing to (i) technological hitches or problems with the **full trading participant's connection** to B3's **trading system**, (ii) abnormal prices or high **volatility** of the **asset** or **derivative**, and/or (iii) unforeseen circumstances or force majeure entailing technological interruptions, the Director of Electronic Trading may deem these to justify a dispensation.

B3 will communicate decisions to grant such dispensations using the usual means of communication with the market.

2.4.5. No access to insider information

Market makers must not have access to relevant information that has not been publicly disclosed with regard to the **assets** and/or **derivatives** in the program, with regard to the **issuer**, where applicable, and with regard to other companies in the same business group. **Market makers** must not trade in **assets** and/or **derivatives** with the aim of gaining access to insider information before it is disclosed to the market.

Market makers must take appropriate and necessary measures to segregate access to relevant information about the **assets** and/or **derivatives** in the program and about their **issuers** or the **issuers** of **assets** that serve as **underlying** or reference for a **derivative** in the program. The segregation must encompass without limitation the other companies in the same business group as the **issuer** concerned, so as to assure strict compliance with the applicable legal and regulatory provisions.

Any **market maker** that happens to have access to insider information must immediately stop acting as a **market maker** and notify B3.

Market makers are not allowed to trade in any **asset** issued by them or in any **derivative** with an **underlying** issued by them or referenced to an **asset** issued by them. No **market maker** may trade in any **asset** or **derivative** with an underlying issued by a company that is its direct or indirect parent, subsidiary, affiliate or joint venture, or in any **asset** or **derivative** referenced to an **asset** issued by such a company.

Market makers must inform B3 of any change to their shareholding or ownership structure that entails a change of direct or indirect control within fifteen (15) days of the change in question.

2.5. Disaccreditation

B3 may revoke a **market maker's** accreditation for a given **asset, derivative** or program in the following situations:

- I - Failure to discharge any of the obligations established by this trading procedures manual, B3's trading rulebook and the applicable regulations;
- II - Failure to comply with the activity parameters;
- III - Cancellation of registration as a **market maker**.

Market makers may apply to B3 for disaccreditation from an **asset, derivative** or program by filing at least thirty (30) days written notice in advance of the end of their activity. B3 may waive or shorten this advance notice requirement at its sole discretion.

2.6. Substitution

In the event of **market maker** substitution by a contracting party, the substitute **market maker** is responsible for notifying B3 and at the same time filing an accreditation instrument for the requisite approval of parameters. Accreditation of the substituted **market maker** will be revoked within ten days of B3's approval of the accreditation instrument and/or of the service agreement entered into by and between the substitute **market maker** and the contracting party.

Substitution of a **market maker** is conditional on compliance with the requisite operating procedures and non-interruption of the program so that the substitute **market maker** begins its activities on the business day subsequent to the date on which the substituted **market maker** ceases its activities.

2.7. The flow of communication with B3 is specified in the guide to market maker procedures. Sanctions applicable to market makers

If a **market maker** infringes any of the provisions of B3's trading rules, this trading procedures manual or any of B3's other operating rules and procedures as well as the regulations applicable to its activity, B3 may apply the following penalties, without prejudice to the application of other sanctions in accordance with B3's rulebooks and manuals:

- I - A warning;
- II - A fine;
- III - Suspension of the **market maker's** activity for up to ninety (90) days;
- IV - Disaccreditation and/or cancellation of registration.

The above sanctions may also be applied to a **market maker** on the occurrence of events that at B3's sole discretion may jeopardize the integrity and reliability of the markets it operates.

B3 reports to CVM and BSM all penalties applied to **market makers**.

2.8. General provisions

Market makers must designate an **account** for each **asset** or **derivative** in which they make a market and for supervision of their activities. They may change these **accounts** by application to the Director of Electronic Trading with at least five business days' notice. An **admincon account** may be designated both for **registration** of their own **bids and asks** and for execution of **investors' orders**, but **trades** performed by the **market maker** may not be **allocated** to this **account**.

Detailed rules and instructions for requesting account registration, alteration or exclusion can be found in the guide to **market maker** procedures.

3. TRADERS, ORDER CONVEYORS, RESPONSIBLE BANK ORDER CONVEYORS AND BANK ORDER CONVEYORS

No trader, order conveyor, responsible bank order conveyor or bank order conveyor shall:

- I – Act as an attorney-in-fact for or representative of **investors** to **participants**;
- II - Contract with **investors** to provide securities portfolio management, consulting or research services, or perform such services, even free of charge;
- III - Use passwords or electronic signatures reserved exclusively for use by **investors** to send **orders** via the **electronic system**;
- IV - Receive from or on behalf of **investors** or give **investors** cash, securities or other **assets** for any reason as payment for the provisions of services described in this trading procedures manual;
- V - Produce and send **investors** account statements with information on **transactions** performed or open **positions**.

Traders, order conveyors, responsible bank order conveyors and bank order conveyors are considered representatives of a **full trading participant** or **trading participant**.

3.1. Traders

Traders may execute competing managed **orders**.

Orders sent to the **trading system** by **traders** do not require mandatory identification of the **investor** or master account, except in the case of **orders** sent by **investors** who are high-frequency traders (HFTs) but must respect the timeframe defined in the normative documents regarding **allocation**, give-up designation, and **trade** clearing and **settlement**, with the exceptions specified in this trading procedures manual.

3.2. Order conveyors

Orders sent require mandatory designation of the **investor's** account or master account.

Order conveyors shall not execute competing managed **orders**.

3.3. Responsible bank order conveyors and bank order conveyors

Orders sent require mandatory designation of the **investor's** account or master account.

Orders sent by **responsible bank order conveyors** and **bank order conveyors** require mandatory identification of the **responsible bank order conveyor**, regardless of whether the **order** was received and entered by the latter or by one of the **bank order conveyors** authorized by them.

Responsible bank order conveyors and **bank order conveyors** shall not execute competing managed **orders**.

Responsible bank order conveyors shall:

- I - Authorize **bank order conveyors** to perform the activities defined in this trading procedures manual and in B3's trading rulebook;
- II - Assure compliance with the rules and procedures established by the applicable legislation and regulations;
- III - Assure the segregation of individual and non-shared user accesses.

On receiving an **order** from an **investor** and sending it to the **trading system**, a **bank order conveyor** duly authorized by a **responsible bank order conveyor** from the same branch shall:

- I - Assure compliance with the rules and procedures established by the applicable legislation and regulations;
- II - Use access to the **order** entry system individually without sharing.

Full trading participants or **trading participants** and the bank belonging to the same business group must send B3 a joint statement agreeing to BSM's supervision of their **responsible bank order conveyors** and **bank order conveyors**.

CHAPTER III – TRADING

Trading in **assets** and **derivatives** during **trading sessions** results from the matching of **bids** and **asks** or **cross orders** in B3's **trading system** registered by **authorized participants** in accordance with the provisions of B3's trading rulebook and this trading procedures manual.

Registration of **orders** and **trades** in **assets** and **derivatives** must follow the rules described in this trading procedures manual governing the organized markets on which they are admitted to **trading**.

The list of **assets** and **derivatives** admitted to **trading** is available from B3's portal.

1. LOTS

In organized markets, **orders** may be entered, and **trades registered** with quantities equal to the round lot or multiples thereof. For specific **assets**, **order** entry and **trade registration** is also allowed involving odd lots.

The list of **trading** lots for **assets** and **derivatives** admitted to **trading** is available from B3's portal.

2. TRADING SESSION

Trading sessions are held via the **trading system** and divided into the following periods:

- I - **Regular trading period**
- II - **After-market period** (extended hours)
- III - **After-hours period** (T+1)

Trading hours, periods of **trading sessions** and the respective authorized **assets** and **derivatives** are available from B3's portal.

2.1. Regular trading period

Trades executed during **regular trading periods** are **registered** on the day of their execution.

2.2. After-market period

Orders not canceled during the **order** cancellation phase of a **regular trading period** remain valid in the **after-market period**, subject to **after-market** trading limits, except for the forward rate agreement on DI x U.S. Dollar spread (FRC) and the forward rate agreement on one-day **repurchase agreements** x U.S. Dollar spread (FRO), **orders** for which will be canceled by B3 if they remain valid in the **central order book**.

Trades executed during **after-market periods** are **registered** on the day of their execution.

2.3. After-hours period (T+1)

Before the start of the **after-hours period**, all **orders** with validity for the day are canceled by B3.

Trades executed during **after-hours periods** are registered on the business day subsequent to the day of their execution (T+1), and daily variation margin is cash-settled on the second business day after execution (T+2), in accordance with the **clearinghouse's** rules.

3. INSTRUMENT STATUS AND TRADING PHASES

3.1. Instrument status

The status of **trading** in **assets** and **derivatives** can be configured on the **trading platform** as follows:

- I - Open status: **assets** and **derivatives** can be freely traded, including registration of **orders**, modification of existing **orders**, cancellation of **orders**, and execution of **trades**.
- II - Forbidden status: no **registration**, modification and cancellation of **orders** allowed, and hence no execution of **trades**.
- III - Reserved status: characterizes an **auction** situation, in which **orders** may be registered, modified and canceled. **Orders** that participate in the theoretical price of the **auction** cannot be canceled and can be modified only to improve the price or raise the quantity. Because it involves an **auction**, this status does not permit immediate execution of **trades**, which are executed only when the **auction** ends.
- IV - Order cancellation status: exclusively for **order** cancellation but with no **order registration** and modification or **trade** execution allowed.
- V - Closed status: no **order registration**, modification or cancellation allowed, and **orders** with validity for the day are eliminated from the system.

3.2. Trading phases

Trading phases are previously defined periods for trading of various kinds in each group of **assets** and **derivatives**.

The following phases are available on the **trading platform**:

- I - Pre-opening phase: precedes **trading** in an instrument, with a specific duration and designed to assure the opening of **trading** at a fair and transparent price. **Order registration** is allowed but no **trades** are matched. **Orders** are used only to define the theoretical opening price in accordance with **auction** rules.
- II - Open phase: free **trading**, with **order registration**, modification and cancellation, and **trade** execution.
- III - **Order** cancellation phase: halts entry of new **orders** and **trade** execution. **Orders** can be canceled during this phase.
- IV - Pre-closing phase: halts **order registration**, modification and cancellation. This phase can be used to close **auctions** that are extended sufficiently to overlap with periods of previous **trading sessions**.
- V - Closing **call** phase: closes **trading** transparently using the same rules as those used for fixing (theoretical price formation) in the last few minutes of **regular trading sessions**.
- VI - Closed phase: no **order registration**, modification or cancellation allowed, and **orders** with validity for the day of the **trading session** are eliminated by the system.

4. ORDERS, BIDS AND ASKS

4.1. Orders

Orders are acts that precede **trade** execution whereby **investors** instruct **full trading participants** or **trading participants** to register **bids** or **asks** or execute **trades** in **assets** or **derivatives** on their behalf. **Orders** may contain specific conditions.

Orders must be registered with the **trading system** as **bids** or **asks** by **participants**, observing the following priority rules:

- I - If two or more **orders** have the same price, matching priority will be determined by the chronological sequence in which the **orders** were received;
- II - **Orders** from **investors** who are not linked to a **full trading participant** or **trading participant** must have priority over **orders** issued by **investors** who are;
- III - Managed **orders**, competing managed **orders** and discretionary **orders** do not compete with each other or with other types of **order**, and rules (I) and (II) do not apply to them.

4.2. Order types

The conditions that can be specified by **investors** for execution of their **orders** must accord with the following types of **order**:

- I - **Market order**: specifies only the quantity and characteristics of the **assets** and/or **derivatives** to be bought or sold, and must be executed as soon as it is received;
- II - **Limit order**: executed only at a price equal to or better than the price specified by the **investor**;
- III - **Managed order**: the **investor** specifies only the **asset** and/or **derivative** to be traded and the total quantity or financial volume, so that distribution of execution (price, quantities and time) is the responsibility of the **full trading participant** or **trading participant**;
- IV - **Competing managed order**: a managed **order** issued together with one or more managed **orders** or discretionary **orders** for the same **asset** and/or **derivative**, and on the same side, so as to compete for execution. **Trades** executed as a result of competing managed **orders** are allocated to the respective **investors** according to average execution price only after the **orders** are executed;
- V - **Discretionary order**: issued by an **investor**, a securities portfolio manager or a representative of more than one **investor**, establishing the conditions under which the **order** is to be executed;
- VI - **Funding order**: an **order** comprising a **bid** or **ask** for one or more **assets** on one of the markets operated by B3 and a concurrent **bid** or **ask** for the same **asset** or **assets** on the same market or another market operated by B3;
- VII - **Stop order**: an order to buy or sell an **asset** or **derivative** when a specified price is reached;
- VIII - **Matched order**: tied to execution of another **order** from the same **investor**; may specify a price limit.

4.3. Bids and asks

Bids and **asks** are acts whereby **authorized participants** manifest their intent to buy or sell **assets** or **derivatives** via **full trading participants** or **trading participants** under the responsibility of one or more **trading participants**, registering the terms and conditions with the **trading system**.

4.3.1. Bid and ask types

The following **bid** and **ask** types are authorized for **registration** with the **trading system**:

- I - Limit bid or ask: must be executed at the price specified by the **investor's order** or better, so that in the case of a limit **bid**, execution must not occur at a price higher than the limit set, and in the case of a limit **ask**, execution must not occur at a price lower than the limit set;
- II - Market bid or ask: must be executed at the best price available on the opposite side of the **central order book** when registered. If not completed filled, the balance is registered at the price of the executed **trade**;
- III - Stop bid or ask: registered in the **central order book** when the specified trigger price is reached. If executed, the resulting **trade** must be at a price between the trigger price and the limit price specified in the **bid** or **ask**. The following rules apply:
 - (a) Stop limit **bid**:
 - (i) The trigger price must be higher than the price of the last **trade**;
 - (ii) The limit price must be equal to or higher than the trigger price;
 - (iii) The **bid** is registered in the **central order book** at the limit price.
 - (b) Stop limit **ask**:
 - (i) The trigger price must be lower than the price of the last **trade**;
 - (ii) The limit price must be equal to or lower than the trigger price;
 - (iii) The **ask** is registered in the **central order book** at the limit price.
 - (c) When a stop **bid** or **ask** is registered in the **central order book**, it is converted into a limit **bid** or limit **ask**;
 - (d) Stop **bids** and **asks** may not be registered during an **auction**.

For **assets** traded on the exchange market, the following **bids** and **asks** are also allowed:

- I - Market bid or ask with protection: the limit price for execution is the best available price based on the first price level on the opposite side of the **central order book** at the time of **registration** plus the protection value for a **bid**, or minus the protection value for an **ask**;
- II - Stop bid or ask with protection: activated when a **trade** is matched at a price equal to or higher than the trigger price, with the limit price for execution being the trigger price plus the protection value for a **bid**, or minus the protection value for an **ask**.

Bid and **ask** types are available from B3's portal. In the event of changes to **bid** and **ask** types, B3 will inform participants in an external communication.

4.3.2. Bid and ask qualifiers

Bid and **ask** qualifiers are available from B3's portal. In the event of changes to **bid** and **ask** qualifiers, B3 will inform participants in an external communication.

The following qualifiers for **bids** and **asks** are allowed:

- I - Minimum quantity: conditional on matching the minimum quantity defined at **registration**. If the minimum quantity cannot be matched, the **bid** or **ask** is automatically eliminated by the **trading system**. The following rules apply:
 - (a) The minimum quantity must be a multiple of the round lot;
 - (b) If the minimum quantity is matched, the balance (if any) remains on the **central order book** until at least one round lot is matched;
 - (c) If a registered **bid** or **ask** is converted into a minimum quantity **bid** or **ask**, the latter will be eliminated from the **central order book** if the minimum quantity cannot be matched;
 - (d) No **bids** or **asks** can be registered during an **auction**.
- II - Disclosed quantity (iceberg): only part of the quantity is visible to the market. The following rules apply:
 - (a) The disclosed quantity must be a multiple of the round lot. Round lot multipliers are available from B3's portal;
 - (b) For **assets** traded on the exchange market, no disclosed quantity **bids** or **asks** for odd lots can be registered;
 - (c) When the disclosed quantity is completely filled, the **trading system** checks to see whether there is a remainder from the total quantity of the **bid** or **ask**. If so, the **trading system** makes this a new disclosed quantity, which loses priority in the **central order book** compared with already registered **orders** at the same price;
 - (d) An increase in the publicly quoted quantity of a disclosed quantity **bid** or **ask** comes into effect only after total execution of the previously quoted quantity;

(e) If the disclosed or total quantity of a **bid** or **ask** is decreased, or the total quantity is increased without any change to the disclosed quantity, the **bid** or **ask** will not lose priority in the **central order book** compared with already registered **orders** at the same price.

III - Day: remains valid until a trade is matched or until the end of the trading session in which it is registered. If unmatched, the **order** is canceled;

IV - Immediate-or-cancel (IOC): accepted by the **trading system** for **registration** only if part of its quantity is matched immediately.

The following rules apply to IOC **orders**:

(a) If part of the **order** is filled, the remainder is automatically eliminated by the **trading system**;

(b) If it is impossible to match at least part of the quantity, the **order** is automatically eliminated by the **trading system**;

(c) If a previously registered **order** is modified to become an IOC **order**, the **trading system** will check whether at least part of the quantity can be matched. If not, the **order** is automatically canceled by the **trading system**;

(d) Registration of IOC **orders** is allowed during an **auction**. If any IOC **order** is partially filled after the **auction** ends, the remainder is canceled.

V - Fill-or-kill (FOK): registered by the **trading system** only if the total quantity is matched on **registration**. Otherwise the **order** is automatically eliminated by the **trading system**.

If a previously registered **order** is modified to become a FOK **order**, the **trading system** will check whether the total quantity can be matched. If not, the **order** is automatically canceled by the **trading system**. **Registration** of FOK **orders** during an **auction** is not allowed.

VI - Good-till-cancel (GTC): remains active on the **central order book** until completely filled or canceled, until the occurrence of dividend distribution or other entitlements involving the **asset**, or until expiration (if a **derivative**);

VII - Good-till-date (GTD): remains active on the **central order book** until completely filled or canceled, until it expires on the date set in the order, until the occurrence of dividend distribution or other entitlements involving the **asset**, or until the **derivative** expires;

VIII - Market-on-auction (MOA): registered only during an **auction** for execution when the **auction** ends at the theoretical price then calculated. MOA **orders** have priority over other **order** types

or qualifiers except MOC **orders**, with which they compete according to chronological sequence of **registration**. If a MOA **order** is not completely filled at the end of the **auction**, the remainder is eliminated;

- IX - Market-on-close (MOC): can be entered at any time during the **regular trading period** but is registered in the **central order book** only during the closing **call**. MOC **orders** have priority over other **order** types or qualifiers except MOA **orders**, with which they compete according to chronological sequence of **registration**. If a MOC **order** is not completely filled at the end of the **auction**, the remainder is eliminated.

4.3.3. Cross orders

Cross orders for **assets** or **derivatives** may be rejected:

- I - During a **call** or **auction**, except a **volatility call**;
- II - If there are registered valid **orders** with a better price.

In the absence of other **orders**, **registration** of a **cross order** for **assets** and/or **derivatives** is accepted only if its price complies with the **auction** tunnel limits.

Cross orders for **assets** and options referenced to **equities**, Ibovespa, IBrX-50 and ETFs are registered only if their price is equal to or higher than the best **bid** and equal to or lower than the best **ask** registered in the **central order book**.

Cross orders for other **derivatives** are **registered** only if their price lies between the best bid and the best ask. If the difference between the best **bid** and the best **ask** corresponds to tick size, registration of the **cross order** at a price equal to the best **bid** or to the best **ask** is accepted.

B3 may cancel **cross orders** if their quantity is less than the minimum established by B3 and posted on its portal.

B3 may authorize the **registration** of **cross orders** in accordance with the provisions of this trading procedures manual in order to enable closeout of the **positions** of **investors** who are declared to be in default or experience difficulties in honoring their obligations.

B3 may deny **registration** of **cross orders** for **assets** and/or **derivatives** with low liquidity.

5. CALLS

There are four kinds of **call**:

- I - **Opening calls**;
- II - **Special calls** or **volatility** structured transaction **calls**;
- III - **Intermediate calls**;
- IV - **Closing calls**.

B3 may change the start time and/or duration of **calls**, notifying the market in advance of any such change.

The times of **calls** and periods for **order** cancellation are available from B3's portal.

5.1. Opening calls

During **opening calls**:

- I - **Order registration** does not result in **trade** matching;
- II - **Orders** are subject to the type 1 and type 4 **rejection tunnels**, in accordance with the provisions of this trading procedures manual;
- III - **Orders** may be registered, modified and canceled, in accordance with the provisions of this trading procedures manual.

To assure good price formation and the integrity and regular functioning of the markets it operates, B3 may cancel **trades** executed at the start of an **opening call** and begin a new **call** for **assets** and **derivatives**, notifying the market in advance.

5.1.1. Opening call extensions

The rules and definitions for automatic extensions to **calls** for **assets** and **derivatives** are available in this trading procedures manual and on B3's portal.

5.2. Special calls or volatility structured transaction calls

The following rules and procedures apply to **special calls**:

- I - Registered **orders** can be canceled or modified at any time during a **volatility call**, since these calls do not involve **auctions**;
- II - **Trades** are matched on the basis of registered **bids** and **asks**, following the chronological sequence of **registration** and the best-price principle;

III - B3 establishes the price range (floor and cap) for **order registration** and matching;

IV - B3 does not use the **protection tunnel** during **volatility calls**.

The **derivatives** submitted to special **calls** are available from B3's portal.

5.3. Intermediate calls

The following rules and procedures apply to **intermediate calls**:

I - **Order registration** does not result in **trade** matching;

II - **Orders** are subject to the type 1 and type 4 **rejection tunnels**, in accordance with the provisions of this trading procedures manual;

III - **Orders** may be registered, modified and canceled provided the operating procedures for **auctions** are followed.

IV - **Trades** executed during **intermediate calls** do not affect settlement price formation.

To assure good price formation and the integrity and regular functioning of the markets it operates, B3 may cancel **trades** executed at the start of an **intermediate call** and begin a new **call** for **assets** and **derivatives**, notifying the market in advance.

5.3.1. Intermediate call extensions

The rules and definitions for automatic extensions to **calls** for **assets** and **derivatives** are established in this trading procedures manual and available from B3's portal.

5.4. Closing calls

The following rules and procedures apply to **closing calls**:

I - **Order** registration does not result in **trade** matching;

II - **Orders** are subject to the type 1 and type 4 **rejection tunnels**, in accordance with the provisions of this trading procedures manual;

III - **Orders** may be registered, modified and canceled provided the operating procedures for **auctions** are followed.

To assure good price formation and the integrity and regular functioning of the markets it operates, B3 may cancel **trades** executed at the start of a **closing call** and begin a new **call** for **assets** and **derivatives**, notifying the market in advance.

5.5. Closing call extensions

The rules and definitions for automatic extensions to **calls** for **assets** and **derivatives** are established in this trading procedures manual and available from B3's portal.

6. AUCTIONS

An **auction** is a special **trading** procedure whereby a **trade** is exposed to competing **bids** and **asks** for a short period.

6.1. Theoretical price formation (fixing)

The criteria for **theoretical price** formation are described below:

- I - First criterion: The **auction** price is the price at which the largest quantity of the **asset** or **derivative** is traded.
- II - Second criterion: In the event of a tie on the first criterion, i.e. if there are two or more prices at which the same quantity of **assets** or **derivatives** is traded, the prices that create the smallest imbalance in the sale are selected, and in the interval between these prices the **theoretical price** is the closest to the price of the last **trade**, or in its absence the closest to the adjusted closing price or, for **derivatives** only, the closest to the settlement price for the **trading session**, rounded in accordance with tick size.
- III - Third criterion: In the event of a tie on the first and second criteria, i.e. if there are two or more prices at which the same quantity of **assets** or **derivatives** is traded, and two or more prices at which the same imbalance is created on opposite sides, the **auction** price is the closest price to the price of the last **trade** among those that created the tie on the second criterion, or in its absence the closest to the adjusted closing price or, for **derivatives** only, the closest to the settlement price for the **trading session**, rounded in accordance with tick size.

6.2. Characteristics

The characteristics of **theoretical price** formation are described below:

- I - There is no pro-rata matching for **orders** at the same price, except in the cases specified in this trading procedures manual.

- II - The **trading system** uses a price scale rather than a single price to set the **theoretical price**, which is as close as possible to the last price or, where applicable, to the settlement price.
- III - **Bids** that are equal to or higher than the **theoretical price** and **asks** that are equal to or lower than the **theoretical price** cannot be canceled or have their quantity reduced but can be changed only to improve the price or increase the quantity, except in cases of correction and/or cancellation of **orders** by B3.
- IV - **Bids** with a higher price than the **theoretical price** and **asks** with a lower price than the **theoretical price** are completely filled.
- V - **Bids** and **asks** at the **theoretical price** may be filled completely, partially or not at all, depending on the theoretical quantity for the **auction**.
- VI - Disclosed quantity (iceberg) **orders** cannot be registered during an **auction**. Disclosed quantity **orders** registered before the start of an **auction** must comply with the priority rule for the quantity publicly quoted when they join the **auction**. If an **order** is modified, the total quantity must be disclosed to the market.
- VII - Remainders of immediate-or-cancel (IOC) **orders** are canceled at the end of the **auction**.

6.3. Priority

The **trading system** uses the following priority rules to match **trades** subject to **auction**:

- I - Market-on-auction (MOA) **orders** for **auctions** and market-on-close (MOC) orders for **closing calls** are matched first. The balance of any such **orders** that are not completely filled when the **auction** begins is eliminated;
- II - **Orders** containing price limits have priority for matching at the same price level in accordance with the chronological sequence of their registration, except for **orders** originating with canceled **trades** and re-entered by B3.

6.4. Auction extensions

The following events may justify an **auction** extension:

- I - A change in the **theoretical price**;
- II - A change in the theoretical quantity;
- III - Registration of a new **order** that changes the filled quantity of a previously registered **order**;
- IV - A change in the unfilled balance;

V - Triggering of the **protection tunnel**;

VI - A decision by B3 to grant an extension.

B3 may extend or open an **auction** to preserve the regular development of trading.

The duration and extension parameters for **auctions** of **assets** and **derivatives** are communicated by B3 and are available on its portal.

6.5. Auction types

The procedural rules governing the holding of auctions are divided according to the type of **auction**:

I - **Ordinary auctions**;

II - **Special auctions**;

III - **Auctions for public tender offers (PTOs) for shares**;

IV - **Auctions for public tender offers for investment fund units (OPACs)**.

6.5.1. Ordinary auctions

Ordinary auctions are held to comply with:

I - Regulatory requirements or a ruling by CVM;

II - B3's operating procedures;

III - A ruling by B3's CEO, COO or Director of Electronic Trading.

Ordinary auctions are held without the need for consent from the buying or selling **full trading participants** or **trading participants** involved.

Ordinary auctions are subject to the **trading tunnel** rules established in this trading procedures manual.

6.5.1.1. Assets and derivatives submitted to ordinary auctions

All **assets** and **derivatives** admitted to **trading** on the exchange market and organized over-the-counter market operated by B3 can be submitted to **ordinary auctions**.

6.5.1.2. Eligibility

An **ordinary auction** will be held when a **trade** is eligible on the basis of the quantity, quotation and/or tradability criteria established in this trading procedures manual.

6.5.1.3. Baseline price

The **baseline price** of each **asset** is defined as follows:

- I - At the start of a **trading session** and before execution of the first **trade**:
 - (a) The **baseline price** is equal to the adjusted closing price and corresponds to the center of the type 1 **rejection tunnel**, to the type 2 **rejection tunnel**, to the type 1 **auction tunnel** and to the type 2 **auction tunnel** respectively;
 - (b) In the case of exchange-traded funds (ETFs), the **baseline price** that corresponds to the center of the type 1 **rejection tunnel** and to the type 1 **auction tunnel** is the adjusted closing price of the ETF, and the **baseline price** that corresponds to the center of the type 2 **rejection tunnel** and to the type 2 **auction tunnel** is the **theoretical value** of a unit of the ETF (indicative optimized portfolio value, IOPV) referring to the previous trading day's closing price;
 - (c) In the case of unsponsored BDRs, the **baseline price** that corresponds to the center of the type 1 **rejection tunnel** and to the type 1 **auction tunnel** is the adjusted closing price of the BDR. The **baseline price** that corresponds to the center of the type 2 **rejection tunnel** and to the type 2 **auction tunnel** is the adjusted price of the BDR's **underlying**, which is equivalent to the price of the last **trade** in the **underlying** on its market of origin divided by the BDR's parity. Because the price of the **underlying** is quoted in U.S. Dollars (USD), B3 uses the **quotation** of the first contract month of the U.S. Dollar Futures Contract (exchange rate) to translate the price of the last **trade** in the **underlying** on its market of origin into Brazilian Reais (BRL).

- II - **After execution of the first trade**:
 - (a) The **baseline price** is:
 - (i) The price of the last trade in the **asset**, which corresponds to the center of the type 2 **rejection tunnel** and to the type 2 **auction tunnel**;
 - (ii) The opening price, which corresponds to the center of the type 1 **auction tunnel**;
 - (iii) The closing price, which corresponds to the center of the type 1 **rejection tunnel**;or

- (iv) If an **auction** is triggered by violation of the type 1 **auction tunnels** during the **trading session**, the center of the tunnels is the resulting **auction price**.
- (b) For Brazilian ETFs, the **baseline price** that corresponds to the center of the type 2 **rejection tunnel** and to the type 2 **auction tunnel** is the price of the last **trade** in the ETF or the theoretical price (IOPV) of the ETF, whichever is more recent. The IOPV is updated whenever it rises or falls one per cent (1%) on the ETF's last **baseline price**.
- (c) For unsponsored BDRs, the **baseline price** that corresponds to the center of the type 2 **rejection tunnel** and to the type 2 **auction tunnel** is the adjusted price of the **underlying** or the price of the last **trade** in the BDR, whichever is more recent. If it rises or falls two per cent (2%) on the adjusted price of the **underlying**, the latter is recalculated and used as the **baseline price** for ensuing **trades**.

B3's Director of Electronic Trading may establish different criteria from those specified in this trading procedures manual for the definition of the **baseline prices of assets and derivatives** if required by market conditions.

The above criteria do not apply to the options market.

6.5.1.4. Specific reasons for holding an auction

The following occurrences are also considered potential reasons for holding an **auction**.

- I - Highly volatile **assets**: If an **asset's** volatility exceeds four times that of the price of the Bovespa Index (Ibovespa), B3 may hold an **auction** lasting at least thirty (30) minutes for the first **trade** in the **asset** (opening price) and hold **auctions** during the **regular trading period** lasting at least fifteen (15) minutes each if the price of the **asset** fluctuates to the upside or downside three per cent (3%) or more relative to the price of the last **trade**.
- II - Announcements of dividends and other entitlements: When an **issuer** of a listed security announces the distribution of dividends and other entitlements, B3 may hold an **auction** with a duration determined by the Director of Electronic Trading to preserve price continuity.
- III - Technological problems: If a **full trading participant** or **trading participant** notifies technical problems or issues with technology before the end of an **auction**, the close of the **auction** may be delayed. If the **auction** is resumed after the original closing time is past, a new time will be scheduled for the **auction** to be held with a duration of at least five minutes.
- IV - Volatility structured transactions: **Bids** and **asks** for volatility structured transactions not registered during a **special call** may be submitted to **auction**.

V - Derivatives with non-continuous trading: Some **derivatives** admitted to **trading** on B3 are traded solely by **auction**. The list of such **derivatives** with **auction** durations and extensions is available from B3's portal.

6.5.1.5. Analysis of trades in consecutive trading sessions

B3's Director of Electronic Trading routinely analyzes trading activity to detect concentration or splitting of **trades** among two or more **investors** via one or more **full trading participants** and/or **trading participants** in a period comprising fifteen (15) consecutive **trading sessions**. **Trades** that have not yet been settled and fit the concentration or splitting criterion may be canceled and submitted to **auction** in accordance with the provisions of B3's trading rulebook and the applicable regulations.

If the sum of the **trades** executed in more than one **trading session** shows concentration, the **trades** that exceed the quantity criteria stipulated by this trading procedures manual are canceled and submitted to **auction**.

If there are registered **orders** at the same price as the **auction** price, **orders** relating to the canceled **trades** have matching priority at the same price.

If cancellation of a **trade** involves an **asset** affected by a **corporate event**, the **auction** price is adjusted.

Cancellation of **trades** and their submission to **auction** does not apply to:

- I - Day trades** that do not display evidence of an intent to transfer positions between two or more **investors**;
- II - Trades** executed by **market makers**;
- III - Trades** involving strategies with **assets** and **options**;
- IV - Situations** in which an **asset's** liquidity rises without impairing price formation;
- V - Forward funding trades**;
- VI - Trades** whose aggregate financial value is less than fifty thousand Brazilian Reais (BRL 50,000).

Uncanceled **trades** that display concentration and/or splitting are sent for analysis to CVM and BSM.

6.5.1.6. Auctions held in response to an administrative, arbitration or court ruling

Full trading participants or **trading participants** are responsible for executing **orders** to buy or sell **assets** and **derivatives** that are the object of administrative, arbitration or court decisions, and must be designated as such as in the respective rulings.

Execution of the **orders** must occur by means of an **auction**. The **auction** notice must be published at least forty-eight (48) hours in advance. The **auction** lasts at least five minutes and can be extended in accordance with the provisions of this trading procedures manual. If the **orders** are not completely filled, another **auction** may be held to fill the remainder.

The following must be filed with B3 in order to enable the **auction** to be held:

- I - A copy of the administrative, arbitration or court decision authorizing the **auction** and of the supporting documents for the decision;
- II - An **auction** request specifying the quantity of **assets** or **derivatives** and the minimum opening price;
- III - A statement by the seller warranting that the **assets** to be auctioned are free and clear of claims, liens and encumbrances, accompanied by a statement of the seller's **position** with B3's **central securities depository**.

After **settlement** of the **trade**, the **full trading participant** and/or the **trading participant** must notify the organization(s) that issued the administrative, arbitration or court ruling and BSM that the **auction** has been held as required.

6.5.1.7. Auctions to sell odd lots due to bonus issues or reverse splits

The sale of fractional shares or odd lots of **assets** deriving from bonus issues or reverse stock splits must be conducted by **auction**, in accordance with the applicable legislation and regulations.

The auction notice must be published at least forty-eight (48) hours in advance. The **auction** lasts at least five minutes and can be extended in accordance with the provisions of this trading procedures manual.

6.5.2. Special auctions

A **special auction** is a procedure in which **bids** are made for:

- I - **Assets** not admitted to **trading** on an organized exchange market or organized over-the-counter market;

II - Outstanding subscription rights;

III - Portfolios of **assets** and **derivatives**.

The trading procedures for a **special auction** are described in the respective **auction** notice.

6.5.2.1. Assets not admitted to trading

For the holding of a **special auction** for the sale of **assets** not admitted to **trading**, a **full trading participant** or **trading participant** must send B3 a request to hold the **auction** and an **auction** notice containing information on the seller, the **assets** to be auctioned, the dynamics of the **auction** including the payment method, and an express mention that the buyers of the **assets** to be auctioned are entitled to sell them in due course only by means of private transactions.

The **auction** notice must be sent to B3 for approval and published at least forty-eight (48) hours in advance of the **auction**, unless the applicable legislation allows a longer period of notice. The **auction** lasts at least fifteen (15) minutes.

An **auction** request template is available from B3's portal.

6.5.2.2. Outstanding subscription rights

Remainders deriving from non-exercise of preemptive subscription rights are represented by subscription receipts and can be auctioned for the **issuer's** benefit, in accordance with the applicable legislation and regulations.

In the case of outstanding subscription rights to shares corresponding to five per cent (5%) of the quantity issued or less, the **full trading participant** and/or **trading participant** representing the **issuer** must request an **auction** for the sale of the respective subscription receipts and send B3 an **auction** notice specifying the price, quantity and other characteristics of the transaction.

The **auction** notice must be published at least forty-eight (48) hours in advance of the **auction**, which lasts at least fifteen (15) minutes and may be extended in accordance with the provisions of this trading procedures manual.

In the case of outstanding subscription rights to shares corresponding to more than five per cent (5%) and less than one-third (1/3) of free float, the **full trading participant** and/or **trading participant** representing the **issuer** must also observe the specific requirements in the applicable regulations.

In the latter case, the **auction** notice must be published in a major national newspaper at least seventy-two (72) hours in advance. The auction lasts at least fifteen (15) minutes and may be extended in accordance with the provisions of this trading procedures manual.

6.5.2.3. Portfolios of assets and derivatives

By decision of its Settlement Department, B3 may hold **special auctions** of participants' portfolios of **assets** and **derivatives** in order to reduce open positions.

The **auction** notice must contain details of the portfolio in question, alongside other provisions.

6.5.3. Public tender offers for shares (PTOs)

A public tender offer for shares (PTO) may be mandatory or voluntary in accordance with the applicable regulations and is held to buy some or all of the shares issued by a company, subject to approval by CVM in the case of a mandatory PTO, or approval by B3 in the case of a voluntary PTO not involving payment by stock swap.

Auctions are held to perform PTOs in the situations and with the procedures established in the applicable regulations, and in B3's rules for listing of issuers and admission of securities to trading, issuer manual and special listing segment rules.

6.5.3.1. Document filing

To request authorization to hold a PTO, the institution acting as intermediary must file the following documents with B3:

- I - The PTO notice containing the rules for registering, modifying and canceling **orders**;
- II - A copy of the intermediary's service agreement with the **issuer**;
- III - A copy of the appraisal, if any;
- IV - A receipt for payment of the PTO analysis fee stipulated in the fee policy for **issuers**;
- V - Other documents that may be requested by B3 depending on the circumstances of the PTO.

After it receives the documents, B3 publishes on its portal a notice to the effect that the PTO request is under analysis (not applicable to voluntary PTOs).

As of the date on which the PTO request is filed, B3 has thirty (30) calendar days to analyze the documents, except for a voluntary PTO, in which case it has at least three days for the analysis.

When the final draft of the PTO notice has been approved, the Director of Electronic Trading sends the offeror, and CVM where applicable, B3's authorization to hold the **auction** in its **trading system**.

The procedures for accrediting shareholders and transferring shares to B3's central securities depository are described in the PTO notice, as well as the **auction** procedures, and are analyzed by B3 in each case.

6.5.3.2. Procedure

At least three business days before the **auction**, B3 notifies the market that registration of **offers** for the PTO is authorized.

In the case of PTOs held to cancel or convert **issuer** registration, if options on the **issuer's** shares are admitted to trading B3 may delist option **series** without positions and implement any other measures it deems necessary, in accordance with the provisions of this trading procedures manual.

During the **auction**, B3 may:

- I -** Generate **trades**;
- II -** Generate **trades** after pro-rata matching;
- III -** Convene an **auction** lasting at least fifteen (15) minutes when there are **offers** above the price established in the PTO notice in order to give the offeror an opportunity to raise the PTO price or to enable sellers with higher prices to lower them;
- IV -** Convene an **auction** lasting at least fifteen (15) minutes when there are competing **offers**;
- V -** Refrain from generating **trades** and cancel the PTO in the event of non-compliance with the conditions stated in the PTO notice or the applicable legislation and regulations.

For items III and IV, the Director of Electronic Trading may establish a new timetable if the price bid or offered improves before the end of the **auction**.

By the fourth business day after the **auction**, the Director of Electronic Trading notifies CVM regarding the number of **trades** executed, the number of shares settled, and the **auction** price.

6.5.4. Public tender offers for investment fund units (OPACs)

OPACs are held voluntarily to acquire some or all of the units issued by real estate investment funds (FII), subject to B3's approval.

The following rules and procedures apply to an OPAC:

- I - It must be open without distinction to all holders of units in the FII in question;
- II - It must be held in such a manner as to assure equal treatment of all unitholders, providing adequate information about the FII in question and the offeror, as well as the wherewithal for them to make an independent and informed decision whether to accept the offer;
- III - It must be intermediated by a **full trading participant** or **trading participant** authorized by B3, which must guarantee cash settlement of the OPAC and payment for acquisition of any remainder, in accordance with item (X) below;
- IV - The price and payment conditions must be uniform;
- V - Payment must be in cash and in Brazilian Reais (BRL);
- VI - It must be held in the form of an **auction** on B3's **trading system**;
- VII - **Intervention** or a competing OPAC from a third party that is not the offeror or related to it must be allowed;
- VIII - It must be immutable and irrevocable after publication of the OPAC notice, unless: (a) an alteration results in an improved **offer** for unitholders; (b) the offeror relinquishes any of the conditions it originally established for the OPAC; or (c) any modification is made, or the offer is revoked in accordance with the terms and conditions established in the OPAC notice;
- IX - Implementation of its conditions must not depend directly or indirectly on action by the offeror or a related party;
- X - The offeror must undertake to acquire any remainder within one month of the **auction** at the final price of the OPAC updated to the date of effective payment in the manner established by the OPAC notice if more than two-thirds (2/3) of the units issued by the FII are found to be held by the offeror or related parties after the OPAC **auction**;
- XI - The offeror must undertake to keep at least one-third (1/3) of the units issued by the FII in circulation, except in the situation specified in item (x) above.

6.5.4.1. Trading ban

The offeror, intermediary, related parties involved in planning and holding the OPAC and all personnel employed or engaged by them as assistants or advisors are banned from **trading** in units of the FII involved in the OPAC and must implement suitable procedures to enforce this ban.

The above **trading** ban does not apply to the following:

- I - **Trading** on behalf of and for the account of third parties;
- II - **Trades** clearly designed to follow real estate industry benchmark indices;
- III - **Trades** executed by **market makers** in accordance with the rules and regulations issued by CVM;
- IV - Discretionary management of third-party portfolios.

This **trading** ban applies from the moment the OPAC notice is filed, the market is notified of the offeror's intent to hold the OPAC or the intermediary is engaged, whichever occurs first, and lasts until the OPAC **auction** is over.

6.5.4.2. Document filing

To request authorization to hold an OPAC, the institution acting as intermediary must file the following documents with B3:

- I - The OPAC notice;
- II - A copy of the intermediary's service agreement with the offeror;
- III - A receipt for payment of the OPAC analysis fee stipulated in the fee policy for **issuers** and public tender offers;
- IV - The appraisal report, if the price of the offer is based on an appraisal;
- V - Other documents, depending on the structure of the OPAC.

6.5.4.3. Contents of OPAC notice

The contents of the OPAC notice must include the following:

- I - The name of the FII and the main **assets** held by it, as applicable;
- II - The OPAC price, payment conditions and number of FII units;
- III - The name and other details of the offeror and intermediary;
- IV - The reason for holding the OPAC;
- V - The criteria used to set the price;

- VI - The terms and conditions for the offer;
- VII - The procedures for **intervention** or timetable for holding a competing OPAC;
- VIII - The procedure for accrediting unitholders, including the enrollment deadline;
- IX - The **auction** procedures, including the rules for registering, modifying and cancelling **orders**;
- X - Details of the FII in question, including (a) quotations for the past 12 months, if applicable; (b) income; and (c) economic and financial indicators;
- XI - A statement by the offeror as to whether any tax benefits will prevail if the OPAC is held;
- XII - The number of units of the FII in question that are held by the offeror and related parties;
- XIII - An undertaking by the offeror to pay unitholders who accept the OPAC any upside difference between the price paid for their fund units, updated in accordance with the provisions of the OPAC notice and the applicable legislation and adjusted for any change in the number of units, and the price per fund unit paid in another OPAC, if any, held by the offeror or related parties one year after the forthcoming OPAC;
- XIV - Statements by the offeror and intermediary warranting that they are unaware of any facts or circumstances not disclosed to the public that might materially influence the trading prices of the fund units in the OPAC.

6.5.4.4. Intervention or competing OPAC

In the event of a competing OPAC, a notice with the conditions of the offer must be published:

- I - Not more than five business days before the **auction** date;
- II - Setting a price at least five per cent (5%) higher than the OPAC price;
- III - Provided subsequent offers are at least one per cent (1%) higher than the price of the highest offer registered so far;
- IV - For at least ten per cent (10%) of the units in the original OPAC, unless the purpose of the original offer is to acquire more than two-thirds (2/3) of the FII's units, in which case the competing OPAC must be for the same number of units as the original OPAC.

Intervention by other buyers in the **auction** is allowed, subject to the same conditions as those applicable to the competing OPAC, as above, but without the obligation to issue a notice.

Anyone who wishes to intervene in the **auction** must inform the Director of Electronic Trading of their intent and provide information regarding price and number of units, as well as details of the intervening party and intermediary.

6.5.4.5. Timeframe for analysis

B3 has ten business days to analyze the OPAC notice.

The offeror has ten business days to comply with any requirements imposed by B3 as a result of its analysis.

After receiving the OPAC notice with the required alterations, B3 has three more business days to authorize the holding of the OPAC **auction**.

6.5.4.6. Auction authorization

After the documents are analyzed and the final draft of the OPAC notice is approved, B3's Director of Electronic Trading authorizes the holding of the **auction**.

As soon as the OPAC is authorized, the offeror must send the **auction** notice to the administrator of the FII and the latter must then:

- I - Inform unitholders by posting the OPAC notice to the FII's website;
- II - Write and publish a reasoned opinion on the OPAC, addressing the following topics:
 - (a) Whether the offer is appropriate and advisable from the standpoint of the unitholders and the liquidity of their units;
 - (b) The effects of the offer on any tax benefits applicable to the FII;
 - (c) The strategic plans disclosed by the offeror for the FII;
 - (d) Any other points the administrator considers relevant.

The administrator's opinion must take a position for or against acceptance of the OPAC, while pointing out that each unitholder is responsible for deciding whether to do so.

The administrator's opinion, or an opinion of the same kind produced by the fund manager, must be published not less than five days before the **auction**.

6.5.4.7. Publication of the OPAC notice

The OPAC notice must be published within fifteen (15) business days of B's approval.

The **auction** must be held at least fifteen (15) business days and at most thirty (30) business days after publication of the OPAC notice.

If the offer is altered, the **auction** date may be postponed, provided the alteration occurs seven business days after publication of the OPAC notice.

6.5.4.8. Procedure

At least three business days before the auction, B3 notifies the market that registration of offers for the OPAC is authorized.

During the **auction**, B3 may:

- I - Generate **trades**;
- II - Generate **trades** after pro-rata matching;
- III - Convene an **auction** lasting at least fifteen (15) minutes when there are **offers** above the price established in the OPAC notice in order to give the offeror an opportunity to raise the offered price or to enable sellers with higher prices to lower them;
- IV - Submit the **asset** to an **auction** lasting at least fifteen (15) minutes when there are competing **offers**;
- V - Refrain from generating **trades** and cancel the OPAC in the event of non-compliance with the conditions stated in the OPAC notice or the applicable legislation and regulations.

For items III and IV, the Director of Electronic Trading may establish a new timetable if the price bid or offered improves before the end of the **auction**.

By the fourth business day after the **auction**, the Director of Electronic Trading notifies CVM regarding the number of **trades** executed, the number of shares settled, and the **auction** price.

6.5.4.9. General provisions

At any time B3 may determine:

- I - The disclosure of additional information to that required by this trading procedures manual;

- II - Suspension of the OPAC if a remediable irregularity occurs, maintaining the suspension until the irregularity is remedied;
- III - Cancellation of the OPAC if an irreparable irregularity or illegality occurs.

6.6. Auction parameters

6.6.1. Average traded quantity

Asset trades that meet the following average traded quantity criteria in the last thirty (30) **trading sessions** follow the special procedure described below.

Quantity	Duration
Lot between five and ten times average traded quantity	Auction lasting at least five minutes
Lot more than ten times average traded quantity	Auction lasting at least one hour

The above parameters do not apply on the first day of **trading** after a primary or secondary **asset** distribution.

Once an **auction** has been announced because one of the above average quantity criteria has been reached, the respective quantity becomes the new average quantity for the purpose of submitting **trades** to an **auction** valid for the **trading session** concerned, and **trades** with smaller quantities or quantities equal to that of the announced **auction** are submitted to a new **auction** lasting at least five minutes. The following must apply for a new **trade** to fit the new average quantity:

- I - The **investors** involved in the new **trade** must be different from those involved in the previous **auction** or, if they are the same, the **trade** must not exceed any other parameters in this trading procedures manual or the applicable regulations;
- II - This procedure does not apply to **trades** that meet the criterion of quantity compared to the **issuer's** registered share capital, as detailed below.

6.6.1.1. Quantity compared with issuer's share capital

Trades that meet the following criteria for quantity compared with the **issuer's** registered share capital follow the special procedure shown:

Quantity	Duration
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Lot between 0.5% and 0.99% of common shares	Auction lasting at least five minutes
Lot between 1% and 2.99% of common shares	Auction lasting at least one hour
Lot between 1% and 2.99% of preferred shares	Auction lasting at least fifteen minutes
Lot between 3% and 4.99% of preferred shares	Auction lasting at least one hour

Trades that meet the quantity criteria below are submitted to an **auction** lasting at least fifteen (15) minutes after publication of an **auction** notice as indicated:

Quantity	Auction notice published
Lot between 3% and 6% of common shares	24 hours in advance
Lot exceeding 6% of common shares	48 hours in advance
Lot between 5% and 20% of preferred shares	24 hours in advance
Lot exceeding 20% of preferred shares	48 hours in advance

6.6.1.2. Specific criteria triggering an auction for quantity with options

In **trades** involving options on equities and options on Brazilian ETFs, the average traded quantity criterion and the criterion of quantity compared with the **issuer's** registered share capital take into account the quantity of options compared with the registered share capital of the **issuer** of the option **underlying**, in accordance with the parameters used in the cash market.

The following quantity criteria apply to **trades** involving options on indices:

Options on indices	Quantity	Duration
Options on Ibovespa	Lot equal to or greater than twenty thousand (20,000) options	Auction lasting at least five minutes
Options on IBRX-50	Lot equal to or greater than ten thousand (10,000) options	

6.6.1.3. Specific criteria triggering an auction for traded quantity

The criteria applied to **trades** involving subscription rights are average traded quantity and quantity compared with the **issuer's** registered share capital as well as those applicable to the respective shares.

For **trades** in bonus issues or subscription receipts, the percentages used for average traded quantity and quantity compared with the **issuer's** registered share capital are calculated on the quantity of the respective issue of the **assets**.

The following criteria apply to **trades** in BDRs (sponsored and unsponsored):

- I - If the quantity of BDRs is equal to or greater than five per cent (5%) of the quantity of shares issued by the foreign company converted into BDRs, the Brazilian market is considered the relevant market and the **trade** is submitted to **auction** in accordance with the quantity criterion (compared with the average quantity traded in the last thirty **trading sessions** and compared with the **issuer's** registered share capital);
- II - If the quantity of BDRs is less than five per cent (5%) of the quantity of shares issued by the foreign company converted into BDRs, the Brazilian market is not considered the relevant market and the **trade** is submitted to **auction** in accordance with the criterion of the average quantity traded in the last thirty **trading sessions** but the criterion of quantity compared with the **issuer's** registered share capital is applied.

The quantity criteria used for shares apply also to **trades** involving investment certificates or closed investment funds.

In **trades** involving units, the percentages used to apply the criterion of quantity compared with the **issuer's** registered share capital are calculated for the share types and classes in the unit, and the most restrictive value is selected for mixed units.

In **trades** involving Brazilian ETFs, average traded quantity is the greater of the following:

- I - The average quantity of ETF units traded in the last thirty (30) **trading sessions**; or
- II - The quantity of ETF units that corresponds to twenty per cent (20%) of the minimum lot for investment in or withdrawal from the ETF.

In trades involving international ETFs, average traded quantity is the greater of the following:

- I - The average quantity of ETF units traded in the last thirty (30) **trading sessions**; or
- II - The quantity of ETF units that corresponds to one hundred per cent (100%) of the minimum lot for investment in or withdrawal from the ETF.

Forward funding **trades** that meet the criterion of quantity compared with the **issuer's** registered share capital and require advance publication of an **auction** notice are submitted to an **auction** of at least one hour.

With regard to forward funding **trades** submitted to **auction** in the **trading system**:

- I - B3 sets and announces the ticker for the **auction** and designates the buyer, seller, **asset**, quantity, cash price, expiration and rate;
- II - After the **auction**, B3 includes the cash **trade** for the selling **participant** that wins the **auction** at the price and quantity announced in the **auction** notice;
- III - The **intervention** criteria are the best rate and the chronological sequence.

6.6.2. Quotation

For **trades** in **assets** subject to quotation, the quotation parameters and special procedures are available from B3's portal.

6.6.3. Tradability

The following procedures apply to **trades** that meet the tradability criteria listed below:

Tradability	Duration
Asset not traded in the last five trading sessions	Auction lasting at least fifteen minutes
First trade in asset on day of admission to trading	Auction lasting at least fifteen minutes
First trade in asset if there were no trades on day of admission to trading	Auction lasting at least one hour
First trade in asset after occurrence of corporate event	Auction lasting at least five minutes

If the **theoretical price** reaches one hundred per cent (100%) above the starting price or fifty per cent (50%) below the starting price, the **auction** is extended for at least fifteen minutes to allow time

to notify the market of the new **theoretical price**. For **auctions** held with publication of the **auction** notice twenty-four (24) or forty-eight (48) hours in advance, the extension does not apply.

If a **trade** must be submitted to **auction** owing to violation of more than one of the above criteria (price and quantity), the criterion that requires the longer duration prevails.

Regardless of the above criteria, the Director of Electronic Trading may at his sole discretion require a **trade** to be submitted to **auction**:

- I - If the lot to be traded is considered atypical;
- II - To assure price continuity; or
- III - For technical or prudential reasons, in which case the market must be notified in advance.

7. TRADING TUNNELS

Trading tunnels are price or quantity intervals defined by B3 for every **asset** or **derivative**. They apply to both **orders** and **trades**.

B3 uses the following **trading tunnels**:

- I - A **rejection tunnel**;
- II - An **auction tunnel**;
- III - A **protection tunnel** during **auctions** and **calls** except **volatility calls**.

The parameters for **trading tunnels**, minimum bandwidth, and the list of **assets** and **derivatives** subject to these parameters are available from B3's portal. B3 may alter, revoke or establish new time intervals for recalculation of **trading tunnel** parameters and minimum bandwidth for any **asset** or **derivative**, even during a **trading session**, giving the market advance notice of at least thirty (30) minutes except in the exceptional situations described in this chapter.

7.1. Trading tunnel classification

The **trading tunnels** can be classified as follows:

- I - static: limits are static and set in advance by B3, with no change during **trading sessions**;
- II - dynamic: limits are dynamic and may change during **trading sessions**; a further subdivision applies:

- (a) Synchronous: synchronized with the reference value for the price of a given **asset** or **derivative** in real time during the **trading session**. The reference price is calculated on the basis of (i) the updated last price; (ii) the price of the last **trade**; or in the absence of these, (iii) the closing price or settlement price;
- (b) Asynchronous: not synchronized with the price of a given **asset** or **derivative** in real time during the **trading session**. The reference price is based on a calculation methodology adjusted for **trades** in **underlying assets** different from the **asset** or **derivative** concerned.

7.2. Methodology for calculating trading tunnels for markets in options on derivatives and indices, futures and forwards

The methodology for calculating **auction** and **rejection tunnels** for **assets** and **derivatives** is based on the reference price for the **asset** or **derivative** with the highest liquidity or the **underlying asset**.

7.2.1. Derivatives auction and rejection tunnel methodology

The methodology uses the prices of actual **trades** in the most liquid contract months as a basis for dynamic updating of the reference price (tunnel center) to calculate **auction** and **rejection tunnels** for the less liquid contract months, as follows:

- I - Pivot point: the contract month considered most liquid and used as a basis for updating the other contract months, considered less liquid.
- II - Update period: the period during which the system updates the tunnel center, regardless of fluctuations in the price of the **asset** or **derivative**.
- III - Update percentage: the percentage that triggers a tunnel center update, calculated on the latest calculated price or, failing that, on the settlement price.
- IV - Differential: the tunnel center is calculated on the basis of the differential between the settlement prices for contract months of the same commodity.

7.2.1.1. One-day interbank deposit futures (DI1) and futures referenced to the average rate for one-day repurchase agreements backed by federal government bonds (OC1)

The interpolation method is used as an algorithm for constructing yield curves in Brazilian Real (BRL) based on liquid contract months.

The **derivatives** that serve as pivot points are those expiring in the first two months, and those expiring in January, April, July and October with high liquidity in B3's view. Starting with the first

contract considered a pivot point, contract months are exponentially extrapolated until the next contract month considered a pivot point. If the term structure of interest rates does not cover the entire time horizon to be analyzed, the constructed curve must be extrapolated.

The contract months used as pivots and the interpolation and extrapolation formula used to calculate reference prices for the other contract months are available from B3's portal.

7.2.1.2. Ibovespa futures (IND), mini Ibovespa futures (WIN), US dollar futures (DOL) and mini US dollar futures (WDO)

The calculation methodology is based on the settlement price differential between contract months and uses the first contract month as the pivot point, converging to the second contract month as the expiration date approaches.

The contract months used as pivots are available from B3's portal.

7.2.1.3. Cash-settled crystal sugar futures (ACF), cash-settled live cattle futures (BGI), 4/5 Arabica coffee futures (ICF), 6/7 Arabica coffee futures (KFE), anhydrous fuel ethanol futures (ETN), cash-settled hydrous ethanol futures (ETH), cash-settled corn futures (CCM), cash-settled mini crude oil futures referenced to CME Group WTI light sweet crude oil futures (WTI), cash-settled soybean futures referenced to CME Group mini-sized soybean futures (SJC), FRA on DI x US Dollar spread (FRC), and FRA on one-day repurchase agreements x US Dollar spread (FRO)

The calculation methodology is based on the settlement price differential between contract months and uses the first contract month as the pivot point, or the contract month(s) B3 considers most liquid.

The method adds up the settlement price differentials in points between the contract month defined as pivot point and all other contract months.

The contract months used as pivots are available from B3's portal.

7.2.1.4. General considerations

If the inputs to the methodology described in this trading procedures manual are unavailable or only partially available, and/or if events of an economic or operational nature might adversely affect synchronization of the prices calculated or application of the corresponding methodology, B3 may at its sole discretion arbitrate the tunnel center.

7.2.2. Methodology for calculating options auction and rejection tunnels

The procedures for determining **auction tunnels** and **rejection tunnels** for options on equities, options on ETFs, options on futures and options on indices involve the following definitions:

- I - Volatility: Volatility surfaces, available from B3's portal, are required to calculate **auction tunnels** and **rejection tunnels** for options on equities, ETFs, futures and indices. Volatilities may be updated during a **trading session** by the Director of Electronic Trading.
- II - Underlying price: Underlying price highs and lows in the current **trading session** are tracked for a period for the purpose of calculating tunnels.
- III - Volatility shock: An absolute value or percentage added to or subtracted from the volatility of an option. Volatility shocks for the upper and lower tunnel limits may differ.
- IV - Minimum bandwidth (MB): An absolute value added to and subtracted from the tunnel center (calculated on the basis of volatility shock).

The **underlying's** price low for a given period is inserted into the call option pricing formula to determine the lower limit of the **auction tunnel**. Analogously, the **underlying's** price high for a given period is inserted into the put option pricing formula. The volatility inserted into the call and put option pricing formulas is subjected to a downside volatility shock.

The same method determines the lower limit of the **rejection tunnel**, using a different volatility percentage from that used for the **auction tunnel**.

The **underlying's** price high for a given period is inserted into the call option pricing formula to determine the upper limit of the **auction tunnel**. Analogously, the **underlying's** price low for a given period is inserted into the put option pricing formula. The volatility inserted into the call and put option pricing formulas is subjected to an upside volatility shock.

The same method determines the upper limit of the **rejection tunnel**, using a different volatility percentage from that used for the **auction tunnel**.

The tunnels used are the calculated tunnels with the greatest difference between minimum bandwidth (MB) and volatility shock.

The parameters used are available from B3's portal.

If the inputs to the methodology described in this trading procedures manual are unavailable or only partially available, and/or if events of an economic or operational nature might adversely affect synchronization of the prices calculated or application of the corresponding methodology, B3 may at

its sole discretion arbitrate the parameters for tunnel calculation during a **trading session** without advance notice to the market.

Underlying asset prices are determined by different methodologies in accordance with the type of instrument, as described below.

7.2.2.1. Options on equities and ETFs

Options on equities and ETFs use the trade prices of their respective **underlyings** during a **trading session**.

7.2.2.2. Options on futures

To calculate **underlying asset** prices, a contract month is defined as the pivot point in order to find the differential between the settlement prices of the farthest and nearest contract months. For options on indices with odd-month expirations and serial options, a synthetic settlement price is calculated using interpolation between the settlement prices for the contract months available for **trading**.

For options with contract months that involve the **underlyings** considered pivots, the prices traded during the **trading session** are used, and for the other contract months the settlement price differentials are added to the price at which the **underlying** identified as pivot was traded.

The contract months used as pivots are available from B3's portal.

7.2.2.3. Call and put options on average one-day interbank deposit rate (IDI), and call and put options on the index of the average rate of one-day repurchase transactions backed by federal government bonds (ITC)

Calculations for **underlyings** of options on IDI and ITC use the DI1 rate (for options on IDI) or OC1 rate (for options on ITC) traded in the current **trading session** and the spot index available from B3's portal.

7.2.2.4. Options on gold

The **underlying** of options on gold is the gold spot contract with a round lot of 250g (OZ1D).

7.2.2.5. Options on indices

The methodology for calculating the price of the **underlying** is similar to the methodology for calculating **underlying asset** prices for options on futures, using the difference between index adjustments and the pivot point (the contract month with the highest liquidity) and adding this difference to the price of the last **trade** in the index considered the pivot.

To calculate the price of the **underlying** of an index with odd-month expirations, the settlement prices are interpolated between the two indices with the nearest expirations to find the required value. The methodology described in the previous paragraph is then applied.

The contract months used as pivots are available from B3's portal.

7.2.2.6. Options on one-day interbank deposit futures (DI1)

B3 defines percentages to be applied to the option premiums published on its portal for use in calculating **auction tunnels** and **rejection tunnels**.

7.2.2.7. General considerations

If the inputs to the methodology described in this trading procedures manual are unavailable or only partially available, and/or if events of an economic or operational nature might adversely affect synchronization of the prices calculated or application of the corresponding methodology, B3 may at its sole discretion arbitrate the parameters for tunnel calculation during a **trading session** without advance notice to the market.

7.2.3. New rejection tunnel methodology for market in forwards

The methodology for calculating **rejection tunnels** for the market in forwards is based on the criteria described below.

The reference rate is found by interpolating the previous day's DI x fixed rate calculated by B3 between the dates nearest to the forward's expiration date.

Rejection tunnel parameters are checked when declarations are registered.

7.2.3.1. Price parameter validation

Applies to the value entered in the declaration's price field, which reflects the value of the instrument on the cash market before the forward's interest rate is added.

Price limits can be configured automatically or manually:

- I - Automatic: Price high and low parameters automatically follow **trading** in the **underlying** on the cash market.
- II - Manual: Price high and low parameters are defined by B3, regardless of the **underlying's** price high and low values.

The expirations used as pivots and the formula for calculating price highs and lows are available from B3's portal.

7.2.3.2. Rate parameter validation

Applies to the previous day's DI x fixed rate interpolated between the nearest dates to the forward expiration date.

After definition of time to expiration, upper and lower tunnel limits are calculated using the premium and discount values allowed by B3.

The formula for calculating maximum and minimum rates using declared time to expiration and DI x fixed rate variation is available from B3's portal.

7.2.3.3. General considerations

If the inputs to the methodology described in this trading procedures manual are unavailable or only partially available, and/or if events of an economic or operational nature might adversely affect synchronization of the prices calculated or application of the corresponding methodology, B3 may at its sole discretion arbitrate the tunnel center.

7.3. Rejection tunnels

Rejection tunnels are price or quantity variation intervals established by B3 to prevent registration of **asks** above a certain price and **bids** below a certain price.

For **assets** traded on the **exchange market**, B3 may change or revoke **rejection tunnels**, or establish a new interval for recalculation of their parameters and minimum bandwidth, even during the course of a **trading session** or **auction**. The market may be forewarned five minutes in advance of such changes.

The parameters for **rejection tunnels** are available from B3's portal.

There are five types of **rejection tunnel**, as follows:

- I - **Type 1 rejection tunnel** (based on closing price, reference price or settlement price): designed to control price variation above or below a preset value;
- II - **Type 2 rejection tunnel** (based on last price, updated last price, reference price or price of the option's underlying and volatility shock): prevents **registration** of **asks** at or above a certain price and **bids** at or below a certain price;

- III - **Type 3 rejection tunnel** (based on the price of the last trade in the option's underlying): prevents exercise of call **options** on equities and ETFs priced above a certain limit and exercise of put **options** on equities and ETFs priced below a certain limit;
- IV - **Type 4 rejection tunnel** (based on quantity for a single order): rejects **orders** for more than a specified quantity;
- V - **Type 5 rejection tunnel** (based on price of underlying and remuneration rate): rejects forward declarations for equities with a remuneration rate or price above a certain limit.

7.3.1. Type 1 rejection tunnel (based on closing price, reference price or settlement price)

The type 1 **rejection tunnel** is applied during **trading sessions**, and its center is determined as follows:

- I - During a regular **trading** period and **after-market** period, the center of the type 1 **rejection tunnel** is the **asset's** adjusted closing price or reference price, or the **derivative's** settlement price in the previous **trading session**;
- II - During an **after-hours** period, the center of the type 1 **rejection tunnel** is the settlement price;
- III - For forwards, the center of the type 1 **rejection tunnel** is the **asset's** adjusted closing price in the previous **trading session**.

When necessary, the lower limit of the type 1 **rejection tunnel** may be rounded up to decimal places for **assets** traded on the exchange market. For **derivatives**, the rounding criterion is based on tick size.

The following **order** types are automatically rejected by the **trading system** because they violate the limits of the type 1 **rejection tunnel**:

- I - Valid **asks** at a higher price than the upper limit;
- II - Valid **bids** at a lower price than the lower limit;
- III - Day **orders** priced above the upper limit or below the lower limit;
- IV - Day stop **orders** priced above the upper limit or below the lower limit.

When the trigger price is reached, registered GTC and GTD **orders** priced outside the type 1 **rejection tunnel** are automatically adjusted by the **trading system** as follows:

- I - **Asks** have their price adjusted to the upper limit of the tunnel;
- II - **Bids** have their price adjusted to the lower limit of the tunnel;

- III - If the **auction tunnel** limits overlap with the type 1 **rejection tunnel** limits, the **trading system** automatically applies the type 1 **rejection tunnel** limits.

The type 1 **rejection tunnel** is applied individually to each **asset** and **derivative**.

The type 1 **rejection tunnel** limits for **derivatives** do not apply only in the last **trading session** of the contract month, except in the case of commodity **derivatives**, for which the limits are suspended from the third business day prior to the expiration date, and the agricultural **derivatives** 4/5 and 6/7 Arabica Coffee, Anhydrous Fuel Ethanol, and Corn Price Basis Futures CTM (Triângulo Mineiro, MG), COP (Cascavel, PR) and CRV (Rio Verde, GO), for which the limits are suspended from the third business day prior to the first day of the **delivery notice** presentation period.

7.3.2. Type 2 rejection tunnel (based on last price, last updated price, reference price or price of the option's underlying and volatility shock)

The type 2 **rejection tunnel** is applied during **trading sessions**. The tunnel is not applied during opening **calls**, closing **calls** and **auctions**.

For **derivatives** for which the first **trade** of the day is submitted to **auction**, the type 2 **rejection tunnel** is applied only after execution of the first **trade**.

The center of the type 2 **rejection tunnel** is determined as follows.

During the regular **trading** period, the **after-market** period (extended hours) and the **after-hours** period, the center of the type 2 **rejection tunnel** is defined in accordance with the **asset** and/or **derivative**, complying with these criteria:

- I - For **assets**, the tunnel center is the adjusted closing price before execution of the first **trade** of the day, and the price of the last **trade** thereafter;
- II - For **derivatives** referenced to indices, rates, foreign currencies, commodities and swaps, the tunnel center is the settlement price or reference price, or the closing price in their absence, before execution of the first **trade** of the day, and thereafter it is the price of the last **trade** or the reference price, whichever is more recent;
- III - For **derivatives** referenced to indices, rates, foreign currencies, commodities and swaps, if the first **trade auction** rule is not activated the tunnel center is the settlement price before execution of the first **trade** of the day or the best **bid** or **ask** if either is better than the settlement price, and thereafter it is the price of the last trade or the best **bid** or **ask** if either is better than the price of the last **trade**, except for foreign currencies and USD futures (standard and mini contracts) with medium to low liquidity;

- IV -** For ETFs, the tunnel center is the IOPV referring to the adjusted closing price in the **trading session** prior to execution of the first **trade** of the day. After execution of the first **trade**, it is the price of the last **trade** or the IOPV, whichever is more recent, the IOPV being updated whenever positive or negative variation of one per cent (1%) on the last baseline price occurs;
- V -** For unsponsored BDRs, the tunnel center before execution of the first **trade** of the day is the adjusted price of the **underlying**, equivalent to the price of the last **trade** in the BDR's **underlying** on its market of origin divided by parity. Because the price of the **underlying** is quoted in US Dollars (USD), B3 uses the quotation for the first US Dollar futures contract month to translate into Brazilian Reais (BRL) the price of the last trade in the **underlying** on its home market. After execution of the first **trade** of the day, the tunnel center is the adjusted price of the **underlying** or the price of the last **trade** in the unsponsored BDR, whichever is more recent. If positive or negative variation of two per cent (2%) on the adjusted price of the **underlying** occurs, this adjusted price is recalculated and used as a base price for ensuing **trades**;
- VI -** For the options market, the type 2 **rejection tunnel** is calculated using the procedures described in item 7.2.2 of this trading procedures manual;
- VII -** For contracts referenced to exchange rates, except US Dollar futures (standard and mini contracts), the tunnel center for the first **trade** of the day and the first contract month is the **observed market price** (obtained by the parity between the USD and each currency available for **trading**, with the same exception, using the spot quotation in accordance with the international convention for the currency concerned) translated into BRL at the exchange rate observed in the most liquid US Dollar futures contract month; and for all other contract months, the price of the first contract month plus the adjustment difference between the contract month in question and the first US Dollar futures contract month. For other **trades** during the day, the tunnel center is the **observed market price** or the price of the last **trade**, whichever is more recent.

Whenever necessary, the upper limit of the type 2 **rejection tunnel** is rounded up and the lower limit rounded down to two decimal places for **assets** traded on the exchange market. The rounding method used for **derivatives** is based on tick size.

The following **order** types are automatically rejected by the **trading system** because they violate the limits of the type 2 **rejection tunnel**:

- I - Bids** priced at or above the upper limit of the tunnel;
- II - Asks** priced at or below the lower limit of the tunnel;

- III - Stop **bids** for which the difference between the price limit and the trigger price is equal to or higher than the difference between the upper limit of the type 2 **rejection tunnel** and the price of the last **trade**;
- IV - Stop **asks for which** the difference between the price limit and the trigger price is equal to or higher than the difference between the lower limit of the type 2 **rejection tunnel** and the price of the last **trade**.

For **assets** and **derivatives** traded on the exchange market, B3 may change or revoke the type 2 **rejection tunnel** or establish a new interval for recalculation of its parameters and minimum bandwidth, even during the course of a **trading session**. Changes may be made without advance notice to the market, in which case they are communicated after implementation.

7.3.3. Type 3 rejection tunnel (based on the price of the last trade in the option's underlying)

The type 3 **rejection tunnel** is applied during **trading sessions** to the exercise of options on equities and options on ETFs. The tunnel center is determined as follows.

- I - Before execution of the first **trade** of the day in the option's underlying, the tunnel center is the adjusted closing price of the option's underlying in the previous **trading session**;
- II - After execution of the first **trade** of the day in the option's **underlying**, the tunnel center is the price of the last trade in the option's **underlying**.

The following exercise requests are automatically rejected by the **trading system** because they violate the limits of the type 3 **rejection tunnel**:

- I - Requests to exercise call options on equities and ETFs with price fluctuations above a certain percentage of the tunnel center;
- II - Requests to exercise put options on equities and ETFs with price fluctuations above a certain percentage of the tunnel center.

7.3.4. Type 4 rejection tunnel (based on the quantity of a single order)

The type 4 **rejection tunnel** is applied during **trading sessions**.

Bids and **asks** for quantities that violate the limits of the type 4 **rejection tunnel** are automatically rejected by the **trading system**.

7.3.5. Type 5 rejection tunnel (based on price of underlying and remuneration rate)

The type 5 **rejection tunnel** is applied during **trading sessions** in the market for forwards, except **derivatives** of swaps and **assets** referenced to spot gold. It has the following characteristics:

- I - With regard to price: The upper limit of the tunnel is the price high of the forward's **underlying** and the lower limit is the price low of the forward's **underlying**;
- II - With regard to the remuneration rate: The tunnel center is the settlement price of the One-Day Interbank Deposit Rate Futures Contract (DI1) with the expiration date closest to the expiration of the forward, plus a percentage spread set by B3 and available on its portal.

Forward declarations that violate the limits of the type 5 **rejection tunnel** are automatically rejected by the **trading system**. B3 may at its sole discretion allow registration of forward declarations that do not comply with the tunnel limits.

7.4. Auction tunnels

There are four types of **auction tunnel**:

- I - **Type 1 auction tunnel** (based on opening price): triggers an **auction** when an **order** that is being matched reaches a tunnel limit based on opening price;
- II - **Type 2 auction tunnel** (based on the price of the last trade, updated last price, settlement price or reference price): triggers an **auction** when an **order** that is being matched infringes a tunnel limit based on the price of the last **trade**, updated last price, settlement price or reference price;
- III - **Type 3 auction tunnel** (based on the weighted average price): triggers an **auction** when an **order** that is being matched infringes a tunnel limit based on the weighted average price of **trades** recalculated for a time interval set by B3;
- IV - **Type 4 auction tunnel** (based on average traded quantity or issuer's share capital): triggers an **auction** when an **order** that is being matched infringes a tunnel limit based on average traded quantity or quantity compared with the **issuer's** registered share capital.

The parameters of **auction tunnels** are available from B3's portal.

If a **trade** is about to be matched outside the **trading tunnel** in the market for options on **assets** or **derivatives**, it is submitted to an **auction** lasting at least two minutes.

Whenever necessary, the upper limit of an **auction** tunnel is rounded up and the lower limit rounded down in accordance with tick size for the **asset** or **derivative** concerned.

7.4.1. Type 1 auction tunnel (based on opening price)

The type 1 **auction tunnel** has different limits for the **regular trading period** and the **after-market** period. The tunnel is not applied during **opening calls**, **intermediate calls**, **closing calls**, and **auctions**.

The center of the type 1 **auction tunnel** is determined as follows.

- I - Before execution of the first **trade** of the day, the tunnel center is the **asset's** adjusted closing price, and thereafter it is the opening price;
- II - If an **auction** is held during the **regular trading period** because tunnel limits are violated, the tunnel center is the price resulting from the **auction** held;
- III - During the **after-market period**, the tunnel center is the price of the last **trade** in the **asset** executed in the **regular trading period**.

If a **trade** is about to be matched (i) at a price equal to or above the upper limit of the type 1 **auction tunnel** or (ii) at a price equal to or below the lower limit of the type 1 **auction tunnel**, an **auction** is automatically triggered.

The minimum bandwidth of the tunnel for **assets** traded on the cash market (round lots and odd lots) corresponds to twice the tick size available from B3's portal.

During the **after-market period**, if the price of an aggressing **order** violates the type 1 **auction tunnel** (at the moment of matching the **trade** based on the price of the aggressed **order**), the aggressing **order** is rejected. If the price of the aggressing **order** does not violate the type 1 **auction tunnel**, the aggressing **order** is registered and the status of the asset changes to **order** cancellation. Cancellation is permitted only if the **order** concerned is not participating in the formation of the **theoretical price** of the **auction**.

7.4.2. Type 2 auction tunnel (based on last trade price, updated last price, settlement price or reference price)

The type 2 **auction tunnel** is applied during trading **sessions**. The tunnel is not applied during **opening calls**, **intermediate calls**, **closing calls**, and **auctions**.

For **derivatives** for which the first **trade** of the day is submitted to **auction**, the type 2 **auction tunnel** is applied only after execution of the first **trade**.

The center of the type 2 **auction tunnel** is determined in accordance with the **asset** or **derivative**, observing these criteria:

- I - Before execution of the first **trade**, the tunnel center is the **derivative's** settlement price and thereafter it is the price of the last trade in the **derivative**;
- II - Before execution of the first **trade**, the tunnel center is the **derivative's** settlement price, or the best **bid** or **ask** if this is better than the settlement price. After execution of the first **trade**, the tunnel center is the price of the last **trade** in the **derivative**, or the best **bid** or **ask** if this is better than the price of the last **trade**;
- III - The tunnel center is the price of the last **trade**, or in its absence the **asset's** adjusted closing price in the previous **trading session**;
- IV - For **options**, the tunnel is calculated in accordance with the procedure described in item 7.2.2 of this trading procedures manual;
- V - For ETFs, the tunnel center is the IOPV before execution of the first **trade** and thereafter the price of the last trade in the ETF or the IOPV, whichever is more recent, with the IOPV being updated whenever a positive or negative variation of one per cent (1%) on the last price occurs;
- VI - For unsponsored BDRs, the tunnel center before execution of the first **trade** is the **underlying's** adjusted price, equivalent to the price of the last **trade** in the BDR's **underlying** on its market of origin divided by parity. After execution of the first **trade**, the tunnel center is the **underlying's** adjusted price or the price of the last **trade** in the unsponsored BDR, whichever is more recent. If positive or negative variation of two per cent (2%) on the **underlying's** adjusted price occurs, this adjusted price is recalculated and used as a baseline price for ensuing **trades**;
- VII - For contracts referenced to exchange rates, except US Dollar futures (standard and mini contracts), the tunnel center for the first **trade** of the day and the first contract month is the **observed market price** (obtained by the parity between the USD and each currency available for **trading**, with the same exception, using the spot quotation in accordance with the international convention for the currency concerned) translated into BRL at the exchange rate observed in the most liquid US Dollar futures contract month; and for all other contract months, the price of the first contract month plus the adjustment difference between the contract month in question and the first US Dollar futures contract month. For other **trades** during the day, the tunnel center is the **observed market price** or the price of the last **trade**, whichever is more recent.

If a **trade** is about to be matched at a price equal to or above the upper limit of the type 2 **auction tunnel**, or at a price equal to or below the tunnel's lower limit, an **auction** is automatically triggered.

Registered stop **orders** whose trigger price is reached during an **auction** are activated immediately after the **auction** ends. However, if at the end of the auction the **trading** phase or **asset's** status does not permit **order registration**, all stop **orders** eligible for activation are canceled.

Stop **orders** that are activated after an **auction** follow the chronological sequence in which they were registered.

The minimum bandwidth of the type 2 **auction tunnel** corresponds to:

- I - Twice tick size for **assets** traded on the cash market (round lots and odd lots);
- II - The minimum bandwidth parameters for options tunnels available from B3's portal.

7.4.3. Type 3 auction tunnel (based on weighted average price)

The type 3 **auction tunnel** is applied during **trading sessions**. The tunnel is not applied during **opening calls, intermediate calls, closing calls, and auctions**.

The tunnel center is determined in accordance with the following parameters:

- I - The weighted average price of **trades** in the **asset** or **derivative** recalculated for the time interval set by B3;
- II - The price of the last **trade** if no **trades** are executed during the recalculation period;
- III - The closing price or settlement price of the **asset** or **derivative** if no **trades** are executed during the **regular trading period** and **after-hours period**;
- IV - For **derivatives** without a settlement price:
 - (a) The first **trade** is submitted to **auction**; or
 - (b) The tunnel center is the reference price arbitrated by B3.

If a **trade** is about to be matched at a price equal to or above the upper limit of the type 3 auction tunnel, or at a price equal to or below the tunnel's lower limit, an **auction** is automatically triggered.

7.4.4. Type 4 auction tunnel (based on average traded quantity or quantity compared with issuer's share capital)

The type 4 **auction tunnel** is applied during **trading sessions**. The tunnel is not applied during **opening calls, intermediate calls, closing calls, and auctions**.

Type 4 **auction tunnel** limits are calculated considering the lower of these two values: (i) the average traded quantity for **assets** or options **derivatives** referenced to equities, the Bovespa Index (Ibovespa), the Brazil 50 Index (IBrX-50) and ETFs in the last thirty (30) **trading sessions**; or (ii) quantity compared with the **issuer's** registered share capital.

Trades in **assets** or options referenced to equities, the Bovespa Index (Ibovespa), the Brazil 50 Index (IBrX-50) and ETFs that violate type 4 **auction tunnel** limits immediately trigger an **auction**, except forward declarations, which are rejected.

7.5. Protection tunnels during calls and auctions

Protection tunnels are based on the price of the last **trade**, closing price, reference price, settlement price or updated last price before the start of an **auction** or **call** (opening **calls** and closing **calls**), and on average traded quantity, the **issuer's** registered share capital, the sum total of **bids** and **asks**, or the maximum quantity for participation by a **full trading participant** after the start of the **auction**.

B3 postpones the end of a **call** or **auction** and informs the market of the new closing time if either of the following situations occurs during a **call** (except a **volatility call**) or during an **auction** of **assets** or **derivatives**:

- I - If the **theoretical price** of the **asset** or **derivative** is above the upper limit or below the lower limit of the **protection tunnel**; or
- II - If theoretical quantity exceeds the **protection tunnel** parameter.

The tables with the parameters used to calculate **protection tunnels** are available from B3's portal. If B3 changes these parameters, it will inform participants in an external communication.

B3 may alter, revoke or establish new parameters for the **protection tunnel** during the course of a **trading session** without notifying the market in advance.

8. CORRECTION, CANCELLATION AND INCLUSION OF ORDERS AND TRADES IN THE TRADING ENVIRONMENT

The Director of Electronic Trading is empowered to authorize extraordinarily the correction, cancellation or inclusion of **orders** and **trades** in the **trading system**, provided the requirements and procedures established by B3's trading rulebook and this chapter of B3's trading procedures manual are observed.

If B3 cancels a **trade** or **cross trade** that fails to comply with the provisions of its trading rulebook and this trading procedures manual, the **full trading participant** or **trading participant** concerned

must **register** a new **order** to activate an **auction**, or B3 will do so in the event of refusal by the **full trading participant** or **trading participant**.

8.1. Requests for trade correction, cancellation or inclusion due to operating error

A request for a **trade** or **cross trade** to be extraordinarily corrected, canceled or included owing to an operating error must be communicated by the **full trading participant** or **trading participant** concerned to B3 by telephone within thirty (30) minutes of the **trade's registration** for correction or cancellation, or within thirty (30) minutes of the end of the **trading session** for inclusion.

As of B3's acceptance by telephone, the request for a **trade** or **cross trade** to be extraordinarily corrected, canceled or included must be formalized within thirty (30) minutes using a form supplied by B3.

The form must be completed by a representative of the requesting **full trading participant** and also by the **full trading participant** that acts as counterparty to the **trade** if it is not a **cross trade**. The completed forms must be sent to B3's Electronic Trading Department by email and copied to the compliance department of each participant involved if the **trade** in question is not a **cross trade**.

B3 may ask the requesting parties for additional information such as recordings of telephone conversations, screen captures and/or data logs, to be sent by the **full trading participant** within thirty (30) minutes.

No **trade** will be corrected, canceled or included:

- I - To alter the counterparty, **asset** or **derivative** ticker or **investor** account, or to increase the quantity;
- II - In the event of non-compliance with the time granted to complete the request or provide B3 with the requisite additional information;
- III - If this leads to alteration of the opening price, price high, price low or closing price in effect at the time the request is received;
- IV - If this leads to a significant change in the traded quantity in effect at the time the request is received;
- V - If the **trade** in question is executed during special **trading** procedures including opening, intermediate, closing and **volatility calls**, or an **auction**;
- VI - If there has only been one **trade** in the **asset** or **derivative** concerned.

A **trade** may be included only at the price of the last **trade** in the **asset** or **derivative** concerned or at the settlement price, if it involves a **derivative**. If authorized by the Director of Electronic Trading, a **trade** may be included in observance of the price high or low effective in the **trading session**.

8.2. Extraordinary order correction, cancellation and inclusion due to operating error

Requests for extraordinary order correction, cancellation or inclusion due to operating error must be communicated to B3 by telephone. The **full trading participant** concerned may be asked to formalize any such request.

Full trading participants and **trading participants** should preferably use the tools provided by B3 to cancel **orders**.

Order cancellation by B3 is dependent on the existence of sufficient time until the **order** is matched. B3 makes best efforts to carry out cancellation requests but will not be held liable for the execution of **orders** that cannot be canceled.

8.3. Extraordinary cancellation of orders that are participating in auction theoretical price formation

B3 may cancel an **order** that is participating in formation of the **theoretical price** of an **auction** if the **order** originated in an operating error and provided it complies with the minimum limits for financial volume, quantity and/or price fluctuation defined per **order** for each **asset** or **derivative** available from B3's portal.

Extraordinary **order** cancellation requests must be communicated to B3 by telephone within sixty (60) seconds of the end of an **auction**, and formalized not later than the end of the trading session by the **full trading participant** or **trading participant** concerned using the form provided by B3, with evidence that an operating error occurred.

If an extraordinary **order** cancellation request is communicated to B3 by telephone less than sixty (60) seconds before the end of an **auction**, B3 will make best efforts to carry it out but will not be held liable for the execution of an **order** that cannot be canceled.

On receipt of an **order** cancellation request from a **full trading participant** or **trading participant**, B3 follows these procedures if there is time to do so:

- I - Interruption of the **auction**;
- II - Cancellation of the **order** as requested by the **full trading participant** or **trading participant**;

- III - Use of the **trading system's** news channel to notify the market that the **order** has been canceled due to operating error;
- IV - Use of the **trading system's** news channel to notify the market that B3 will wait ten (10) minutes after sending this notification for requests from other **participants** to cancel **orders** affected by the operating error and entered or modified after the **order** placed due to operating error was registered;
- V - Execution of **order** cancellation requests sent by other **participants** by the established deadline;
- VI - Extension of the **auction** for at least two minutes after the last cancellation, respecting the number of extensions and duration originally established for the **asset** or **derivative**;
- VII - Use of the **trading system's** news channel to inform the market of the new times for the end of the **auction** and the opening and closing **calls**;
- VIII - If the operating error treatment procedure interferes with the time for the next **trading phase** to start, B3 may postpone the subsequent phases with advance notice to the market.

Full trading participants responsible for cancelled **orders** must pay the exchange fees and other applicable charges up to the limit set by B3, in addition to a fine set by B3 if the occurrence of an operating error is not proven.

8.4. Unilateral trade cancellation requests due to severe operating error

A request to cancel a **trade** due to severe operating error must be communicated to B3 by telephone by the **full trading participant** or **trading participant** concerned not more than ten (10) minutes after registration of the **trade** and formalized by the end of the trading session by the **full trading participant** or **trading participant** concerned.

B3 will cancel only single **trades** or groups of **trades** in **assets** or **derivatives** that involve a financial loss equal to or more than ten million Brazilian Reais (BRL 10,000,000). If B3 decides to cancel the **trade(s)**, it will make best efforts to do so for up to twenty (20) minutes after receipt of the cancellation request.

Trades not cancelled for any reason by B3 remain valid and the responsibility of the **participants** concerned in accordance with B3's rules and manuals.

B3 imposes a fine on the **full trading participant** responsible for a non-cancelled **trade**, based on the parameters established by a Circular Letter previously approved by CVM.

The uses of funds obtained from payment of fines are also established in Circular Letters previously approved by CVM.

In duly justified exceptional cases, B3's Chief Operating Officer (COO) or Chief Executive Officer (CEO) may authorize the cancellation of **trades** in less or more time than specified above.

9. SUSPENSION OF TRADING

B3's Director of Electronic Trading, by delegation of its Chief Executive Officer (CEO), is empowered to suspend **trading** in **assets** and **derivatives** admitted to **trading** on organized markets in the situations specified by B3's rules and other normative documents.

B3 may use special **trading** procedures for **derivatives** referenced to suspended **assets** in order to close out open positions in **derivatives**, informing the market of the procedures to be used in Circular Letters.

9.1. Suspension of trading due to material fact notice

If **trading** in an **asset** or option on equities is suspended due to the publication or imminent publication of a material event notice during a **trading session**, in accordance with the provisions of B3's trading rulebook, issuer listing and securities admission for trading rulebook and issuer manual, the following procedures will apply.

Communication of material event notice publication by Issuer Regulation Department	Specific procedures	Trading session periods impacted
By 9:14:59 a.m.	No procedure necessary.	No impact.
9:15:00-9:29:59 a.m.	Postponement of order cancellation phases for twenty (20) minutes, followed by: <ul style="list-style-type: none"> • Order cancellation phase lasting five minutes • Opening call lasting at least five minutes 	<ul style="list-style-type: none"> • Order cancellation phase • Opening call
9:30:00-9:59:59 a.m.	Interruption of order cancellation phases and opening call for twenty (20) minutes, followed by: <ul style="list-style-type: none"> • Order cancellation phase lasting five minutes • Opening call lasting at least five minutes 	<ul style="list-style-type: none"> • Order cancellation phase • Opening call

10:00:00 a.m.-4:09:59 p.m. or 10:00:00 a.m.-5:09:59 p.m.*	Suspension of trading for twenty (20) minutes, followed by: <ul style="list-style-type: none"> • Order cancellation phase lasting five minutes • Auction for reopening, lasting at least five minutes 	Regular trading period
4:10:00-4:49:59 p.m. or 5:10:00-5:49:59 p.m.*	Suspension of trading for twenty (20) minutes, followed by: <ul style="list-style-type: none"> • Order cancellation phase lasting five minutes • Auction for reopening, lasting at least five minutes <p>Regardless of its duration, if the trading suspension lasts beyond 4:50 p.m. (or 5:50 p.m. during daylight saving time), a five-minute order cancellation phase will be held, followed by the closing call.</p>	Regular trading period
4:50:00-4:54:59 p.m. or 5:50:00-5:49:59 p.m.*	Closing call .	Regular trading period
4:55:00-5:00:00 p.m. or 5:55:00-6:00:00 p.m.*	No procedure necessary	Closing call
After-market Not applicable	No procedure necessary	

(*) During daylight saving time.

B3 may permit extensions to the above **auctions** in accordance with the provisions of this trading procedures manual, in which case it will take steps to assure smooth operations and normal **trading** activities during the extensions.

9.2. Asset trading suspension due to suspension of underlying assets abroad

B3 may suspend **trading** in **assets** or **derivatives** if **trading** in their **underlyings** is suspended on the organized market on which they are traded abroad.

In this case B3 uses its regular communication channels to announce the time and date on which **trading** in the **assets** or **derivatives** will resume, and convenes a limited-duration **auction** if deemed necessary.

9.3. Other cases of asset and derivative trading suspension

In other situations in which **trading in assets and derivatives** is suspended in accordance with B3's trading rulebook and this trading procedures manual, B3 is empowered to determine the duration of the suspension, the **assets and derivatives** affected and the reasons for the suspension, using its regular communication channels to announce the suspension.

After the **trading** suspension ends, B3 may convene an **auction** for a limited period, if deemed necessary.

10. CIRCUIT BREAKER

The **circuit breaker** is an operating procedure that interrupts all **trading in assets**, options on equities, the Bovespa Index (Ibovespa) and EFTs, and private fixed-income instruments at times of abnormal market movements with excessive volatility.

The following rules apply in sequential order:

- I - If the Ibovespa falls ten per cent (10%) from its closing level on the previous day, all **trading in assets, derivatives** and private fixed-income instruments is interrupted for thirty (30) minutes;
- II - When **trading** resumes, if the Ibovespa falls fifteen per cent (15%) from its closing level on the previous day, all **trading in assets, derivatives** and private fixed-income instruments is interrupted for one hour;
- III - When **trading** resumes, if the Ibovespa falls twenty **per cent** (20%) from its closing level on the previous day, B3 may determine a suspension of **trading in assets, derivatives** and private fixed-income instruments for a certain period to be announced by B3. In this case, it informs the market using its regular communication channels.

10.1. General conditions for triggering circuit breaker

- I - The rules in items (i), (ii) and (iii) above do not apply in the last thirty (30) minutes of a **trading session**.
- II - If the **circuit breaker** is triggered in the last hour of a **trading session**, the end of the session will be postponed for at most thirty (30) minutes to allow time for a resumption of uninterrupted **trading in assets and derivatives**.

CHAPTER IV – TECHNOLOGICAL RISK CONTROL

1. PRE-TRADING RISK CONTROL

1.1. Mandatory use of pre-trading risk control tool

To mitigate the operational risk associated with execution and counterparties, use of the pre-trading risk control tool developed by B3 is mandatory for all **orders** sent to the trading platform.

Full trading participants, trading participants and settlement participants must ensure that the limits defined in their risk policies are adequately configured in B3's pre-trading risk control tool for their **investors**. If additional controls are needed, **participants** must develop and implement them without prejudice to the use of B3's tool.

2. MESSAGING CONTROL

B3 maintains a messaging control policy involving the application of monthly thresholds and ratios to the messages sent to the **trading system**, with the aim of preventing practices that may impair the availability, integrity and proper functioning of the **trading system**.

For this purpose, B3 keeps count of all registered, modified and canceled **orders**, comparing them with numbers of **trades** and **trading** volume. Rejected messages are not included in this count.

This control is based on the individual account specified in the message. If no account is designated, the message and **trade** executed are assigned to the account of the **full trading participant** or **trading participant** responsible for the **connection**.

B3 publishes the parameters for maximum numbers of **order** messages sent compared with numbers of **trades** (NA) and **trading** volume (NB) in each group of **assets** or **derivatives**, as well as thresholds (F) and reduction factors (C), conducting frequent reviews to analyze the need for adjustments to these variables.

An excessive number of messages entails the application of monthly ratios and/or thresholds by B3 to the **full trading participants** responsible for **connections**, in accordance with the messaging control methodology.

2.1. Messaging control methodology

The monthly ratios and thresholds applied when excessive numbers of messages are sent are calculated per account and per **asset** or **derivative** using the following formula:

Value of monthly ratio = A or B, whichever is greater, if positive

where:

- I - $A = \{\text{number of messages sent in period} - NA \times \text{number of trades executed in period} - F\} \times C$
- II - $B = \{\text{number of messages sent in period} - NB \times \text{volume traded in period} - F\} \times C;$
- III - $NA = \text{ratio of messages to trades}$
- IV - $NB = \text{ratio of messages to volume}$
- V - $F = \text{monthly message threshold}$
- VI - $C = 0.01$ for equities and futures, or 0.001 for **derivatives**

The values of the parameters used in this calculation can be obtained from B3's ranking system.

Criterion A reflects the efficiency with which the account operates in terms of messages sent versus **trades** executed. A ratio is applied if the number of messages significantly exceeds the number of **trades** in an **asset** compared with the ratio established for the **asset** (NA).

Criterion B reflects the efficiency with which the account operates in terms of financial volume. A ratio is applied to the account if the number of messages sent to B3 is out of proportion to the financial volume traded. Two parameters are provided for this purpose: the initial daily threshold for messages relating to the **asset** (F), and the ratio of messages about the **asset** to the volume traded (NB).

For **assets** or **derivatives**, volume traded according to criterion B is computed as shown below.

Group of assets or derivatives	Volume traded
Equities and forwards	Financial value
Options on equities, ETFs and indices	Financial value of premium
Derivatives and spot gold	Number of contracts

For the purposes of calculating criteria A and B, different contract months of the same **derivative** are considered jointly, as are different contract months and strike prices for call and put options with the same **underlying**.

The total value of the ratio due, if any, for sending an excessive number of messages is given by the sum of the ratios for each account in the **full trading participant** concerned, and for each **asset** or **derivative**.

Each **asset** or **derivative** is measured independently on a monthly basis. In other words, if both an option and its **underlying** are traded, two thresholds are applied to the respective account in the **full trading participant**, one for the option and another for the **underlying**.

Monthly ratios and/or thresholds are applied to **full trading participants** per group of **assets** or **derivatives** based on the maximum value of the sum of each ratio found for criterion A and criterion B, and can be applied according to criteria A for an **asset** and criterion B for another **asset** in **derivatives**.

3. MARKET PROTECTION

Market protection functionality enables **participants** that use **connections** to set protection parameters which, when reached in a given time interval, trigger automatic cancellation of the **orders** available in the **central order book** (provided their cancellation does not infringe any **trading** rules) and prevent **registration** of new **orders**.

Instrument protection parameters and the respective intervals are defined by **participants** and applied by B3.

B3 may at its sole discretion disable this functionality for specific instruments, giving the market advance notice of any such changes.

3.1. Types of protection available

The following types of protection are available:

- I - Total order execution – activated on the basis of the number of fulfilled **orders**;
- II - Number of executions – activated on the basis of the number of **trades** executed (fully or partially);
- III - Quantity traded – activated on the basis of the sum of quantities executed (purchases or sales) per module;
- IV - Buy/sell – activated on the basis of an imbalance between buy and sell quantities, with purchases raising and sales lowering the count;
- V - Delta – activated on the basis of aggregate delta for options considering all **series** with the same **underlying** regardless of expiration.

Participants can choose all forms of protection or combine specific forms in accordance with their **trading** strategies.

3.2. Characteristics

- I - Protections are activated only when their parameters are reached or exceeded within the interval defined by the **participant**, and cancel only **orders** that the rules allow to be canceled.
- II - If after activation of a protection the **participant** concerned wishes to reset the counter and register new **orders**, the **participant** must notify the **trading system** by appropriately completing a specific field in the **order** message.
- III - The protection counters are automatically reset at the end of each interval if no parameters are reached or exceeded.
- IV - Protections cannot interrupt an execution event, so if a single aggressing **order** matches multiple resting **orders** in the **central order book**, the **trading system** allows infringement of the protection parameter concerned.
- V - Whenever the protection parameters defined for a **connection** are updated, the protection counters are automatically reset. **Orders** entered before the update are disregarded in the next cancellation event and remain active for counting purposes if execution occurs.
- VI - All counters are automatically reset at the end of each **trading** day.
- VII - Any **order** rejection or cancellation due to use of protection functionality is communicated in an execution report message issued by the **trading system** and specifying activation of protection as the reason for rejection or cancellation.

The list of products eligible for market protection functionality is available from B3's portal.

4. THROTTLING

Throttling functionality enables B3 to limit the number of **order** messages per second sent to the **trading system** by each **connection**.

The limits are set by B3 for each **connection** in accordance with the profile of the **participants** linked to it, and reviewed whenever necessary to assure the availability, integrity and proper functioning of the **trading system**.

B3 allows the **full trading participant** or **trading participant** responsible for a **connection** to opt for rejection or queuing of messages received after the limit is exceeded.

5. SELF TRADE PREVENTION FUNCTIONALITY (STP)

Self-trade prevention functionality (STP) prevents matching between buy and sell **orders** for the same **asset** or **derivative** from the same **investor**, regardless of the brokerage house responsible for the two parties to the **trade** (on both the buy side and sell side of the same **trade**).

5.1. Use of STP

STP is optional and may be used only by **participants** and **investors** who use the Entrypoint **order** entry interface. **Trading** desk **connections** can therefore access this functionality only if they use a trading screen that supports STP.

B3 may at its sole discretion disable STP for one or more specific groups of instruments, with advance notice of this change to the market.

5.2. Unique customer identifier

STP applies only to **orders** containing an unique customer identifier (ID), as shown in the table below.

Type of investor	Unique customer identifier (ID)
Legal entity domiciled in Brazil	Basic federal taxpayer number corresponding to first eight digits of investor's CNPJ, without special formatting characters
Individual domiciled in Brazil	Investor's complete federal taxpayer number (CPF) comprising 11 digits, without special formatting
Non-resident investor in Brazil	Individual six-digit code for NRI, given by CCCCCC portion of NRI CVM trading code, which is formatted AAAAAA.BBBBBB.CCCCCC.X-Y

Note that:

- I - The ID is not the same as the **investor** account;
- II - An **investor** who has several accounts and/or is linked to more than one **full trading participant** or **trading participant** must always use the same ID to identify the **orders** subject to STP.

5.3. Functioning of STP

STP prevents matching of buy and sell **orders** with the same ID during the continuous **trading** phase. The main aspects of its functioning are described below.

- I - STP has no effect on **orders** that do not contain IDs.

- II - A buy **order** and a sell **order** with the same ID remain on the **central order book** simultaneously provided there is no possibility of matching them.
- III - In the event of potential matching between buy and sell **orders** with the same ID, the aggressing **order** is eliminated from the **central order book** and the aggressed **order** remains there.
- IV - An **order** containing the **investor's** ID results in a **trade** only if it is matched with **orders** that do not contain the same ID (**orders** with no ID and **orders** with a different ID).
- V - If an **order** is modified to result in an **order** containing an ID and potential matching with an **order** with the same ID, the modified **order** is eliminated.
- VI - If an **order** with an ID is modified to result in an **order** without an ID, STP does not apply to the modified **order**.
- VII - **Orders** with a minimum quantity qualifier and fill-or-kill (FOK) **orders**: before a **trade** is matched the **trading system** analyzes the **central order book** to see if the minimum quantity can be executed without resulting in a self-trade. If execution of the minimum quantity would result in at least one self-trade, the aggressing **order** is entirely eliminated.
- VIII - An **order** with an ID that would result in partial matches against a queue of **orders** is eliminated (or its remainder is) when it meets an **order** with the same ID in the queue.
- IX - If an aggressing **order** with an ID would result in the convening of an **auction**, STP is not activated.
- X - STP is not activated during an **auction**, so that the **auction** is allowed to result in the matching of **orders** from the same **investor**.
- XI - Whenever an **order** is cancelled owing to STP, this is communicated in an execution report message issued by the **trading system**. The reason given for the cancellation in the message is prevention of the matching of **orders** from the same **investor**.

6. CANCEL ON DISCONNECT (COD)

Cancel-on-disconnect (COD) functionality automatically cancels an **order** sent to the trading system if the **connection** fails.

When a **connection** failure is detected, this triggers a request to cancel all **orders** available in the **trading system** and linked to the failed **connection** except **orders** that are participating in an **auction** or when the status of the instrument makes cancellation impossible. Furthermore, **orders** associated with the **connection** that have been registered by B3 in the **participant's** name are also cancelled if COD functionality has been enabled for the **connection**, in accordance with the following alternatives:

- I - Do not cancel **orders** in the event of disconnection (default);
- II - Cancel **orders** only in the event of involuntary disconnection;
- III - Cancel **orders** only in the event of voluntary disconnection;
- IV - Cancel **orders** in the event of involuntary or voluntary disconnection.

COD functionality allows a time interval to be set to enable the **participant** to reconnect before an **order** is cancelled. The value of the interval in milliseconds is also set by the **participant** using a specific field. The counter starts as soon as a disconnection is detected. If the field is not completed, the system assumes the value zero (0).

Upon reconnection, the **participant** receives confirmation of **order** cancellation in an execution report message.

The purpose of COD functionality is to mitigate the operational risks caused by **connection** failure. However, only **orders** that can be canceled in compliance with the **trading** rules and market conditions are effectively canceled.

CHAPTER V – EMERGENCY AND CONTINGENCY MEASURES

1. EMERGENCY MEASURES OF AN OPERATIONAL NATURE

The following procedures apply when emergency measures of an operational nature occur in accordance with B3's trading rulebook:

- I - If the **trading system** is totally or partially suspended for technical reasons, or owing to unforeseen circumstances or force majeure, B3 may suspend **trading** or restore **trading** using contingency systems;
- II - When **trading** resumes after a total or partial suspension, B3's Director of Electronic Trading may convene a pre-opening **auction**, and **orders** sent to the **trading system** before the suspension may be canceled or altered;
- III - If **trading** is totally suspended within thirty (30) minutes of the end of a **trading session**, B3 may postpone the end of the session.

2. OPERATING PROCEDURES IN RESPONSE TO FAILURE OF CRITICAL COMPONENTS OF THE TRADING SYSTEM

B3 may take the emergency measures described below in the event of failure of critical components of the **trading system** with partial impacts on **participants** in its markets.

Component	Market affected	Failure scenario	Procedure
Market surveillance tools	Assets or derivatives	Failure in matching engine management system	Market notified and trading in all assets suspended for thirty minutes without auction
Order entry gateways	Assets or derivatives	Failure in gateways accounting for over thirty per cent of total trading volume	Market notified and five-minute auction held thirty minutes later for all assets . Trading in all assets suspended after auction
		Failure in gateways accounting for under thirty per cent of total trading volume	None

Component	Market affected	Failure scenario	Procedure
Trading desk connections	Assets or derivatives	Impact on over thirty per cent of volume traded via trading desk connections without backup	Market notified and five-minute auction held thirty minutes later for all assets . Trading in all assets suspended after auction
		Impact on under thirty per cent of volume traded via trading desk connections without backup	None
Matching engine	Derivatives	Failure in one or more matching engines	Immediate suspension of trading in contracts and options affected. No change to trading in unaffected contracts.
	Assets	Failure in matching engines accounting for over thirty per cent of trading volume	Thirty-minute auction held immediately for assets <u>not</u> affected. Continuous trading in these assets resumes after auction
		Failure in matching engines accounting for under thirty per cent of trading volume	None
Market data feed	Derivatives	Failure in futures channel	Immediate suspension of trading in contracts and options affected
	Derivatives	Failure in options channel	Immediate suspension of trading in options affected
	Assets	Impact on over thirty per cent of trading volume	Immediate suspension of trading in affected assets , options and forwards. Thirty-minute auction held for assets <u>not</u> affected. Continuous trading in these assets resumes after auction

Component	Market affected	Failure scenario	Procedure
	Assets	Impact on under thirty per cent of trading volume	Immediate suspension of trading in affected assets , options and forwards. No procedure for assets <u>not</u> affected
Instruments	Derivatives	Specific instrument	Immediate suspension of trading in contract months and options affected. No procedure for assets <u>not</u> affected
	Assets	Specific instrument	Immediate suspension of trading in assets , options and forwards affected. No procedure for assets <u>not</u> affected
Calculation of settlement amounts to be collected by B3's clearinghouse	Assets or derivatives	Failure in overnight processing by B3's clearinghouse before trading session opens	Opening of trading session postponed

B3 may at its sole discretion consider other factors, include new scenarios and take additional or different measures to those described above, informing the market as far in advance as possible.

3. BUSINESS CONTINUITY PLAN

B3 has the necessary technological infrastructure and business continuity plan to assure the functioning of the **trading system** in the event of a disaster, breakdown or emergency.

The **trading system** operates with high availability and constant redundancy of resources in its primary and secondary data centers.

In the event of a total or partial **trading system** interruption, **trading** will be resumed via the primary data center in the following conditions:

- I - Periods will be established for **order** cancellation and pre-opening before the **trading session** resumes;
- II - Possible postponement of the end of the **trading session** if the interruption occurs within thirty minutes of the close.

If the primary data center should become unavailable, **trading** will resume via the secondary data center in accordance with the procedures described below.

- I - Announcement of the operating procedures to be used by **participants** in the affected market.
- II - Establishment of a pre-opening period before the **trading session** resumes.
- III - Only **trades** processed by the clearinghouses will be considered valid.
- IV - **Orders** with validity on the **central order book** will be discarded.
- V - **Connections** will not receive messages confirming the elimination of **orders** when **trading** resumes via the secondary data center.

If the **trading system** is totally interrupted at the primary and secondary data centers during a **trading session** with no possibility of a resumption on the same day, B3 may use alternative mechanisms to match **orders** and send **trades** to post-trading.

These mechanisms will be designed to reduce **positions** and mitigate the associated risks under the conditions described below.

- I - **Full trading participants** send data regarding **trades** for which the buying and selling **investors** are on their **trading** premises (**cross trades**) to a web address specified for this function and announced by B3.
- II - **Full trading participants** send data regarding **trades** for which only the buying or selling **investor** is on their **trading** premises, including the code for the **full trading participant** that

will act as counterparty to each **trade (registered trades)**, to a web address specified for this function and announced by B3.

- III - **Full trading participants** send data regarding **trades** for which only the buying or selling **investor** is on their **trading** premises, but for which they do not have a counterparty, to a web address specified for this function and announced by B3.
- IV - **Full trading participants** send data until a time set by B3, which may reject data sent after the time limit in question.
- V - Data are accepted for **cross trades** and **registered trades** in the **assets** and **derivatives** admitted to **trading** in the **trading system**.

B3 may exceptionally establish different conditions from these, with advance notice to the market.

TITLE III – ORGANIZED MARKETS

CHAPTER I – EXCHANGE MARKET

1. CASH EQUITIES MARKET

The equities **traded** on the cash market are subject to the **trading, auction** and **trading tunnel** procedures described in this trading procedures manual.

Tickers for equities traded in round lots on the cash market are alphanumeric, as exemplified below.

Type of security	Number	Example
Common stock subscription rights	01	ABCD1
Preferred stock subscription rights	02	ABCD2
Common stock	03	ABCD3
Preferred stock	04	ABCD4
Class A preferred stock	05	ABCD5
Class B preferred stock	06	ABCD6
Class C preferred stock	07	ABCD7
Class D preferred stock	08	ABCD8
Common stock subscription receipts	09	ABCD9
Preferred stock subscription receipts	10	ABCD10
Other securities, such as units, investment fund subscription receipts, and investment fund units	11-30	ABCD11
Level 1 sponsored BDRs	31	ABCD31
Level 2 sponsored BDRs	32	ABCD32
Level 3 sponsored BDRs	33	ABCD33
	35	ABCD35
	36	ABCD36
Level 1 unsponsored BDRs	34	ABCD34

Tickers for equities traded in odd lots on the cash market are the same as the tickers for equities traded on the cash market except that they end with the letter F (for fraction), as exemplified below.

Type of security	Number	Example
Common stock	03	ABCD3F
Preferred stock	04	ABCD4F
Class A preferred stock	05	ABCD5F

1.1. Special rules for trading in subscription rights and subscription warrants

Trading in subscription rights is allowed between the date set for subscription to start and the fifth business day prior to the end of the period designated by the company for exercising subscription rights.

Trading in subscription warrants is allowed between the date set by the company and the fifth business day prior to the end of the period designated by the company for exercising the rights granted by subscription warrants.

1.2. Special rules for trading in subscription receipts

Trading in subscription receipts is allowed, provided they relate to fully paid up shares in accordance with the applicable legislation and regulations.

Trading in subscription receipts occurs only during the period that precedes execution of the respective capital increase or, in the case of investment funds, until the end of public distribution.

Any rights to outstanding subscription receipts belong to the original subscribers in accordance with the applicable legislation and regulations.

If the capital increase is not executed, buyers of subscription receipts are only entitled to receive from the **issuer** a refund of the amount actually paid by the original subscriber.

New securities issued by **issuers** are traded separately from existing securities only if the **issuer** expressly establishes in the act of approving the respective issue or in its constitutional documents that future dividends and other entitlements arising from the new securities will be distributed separately from future dividends and other entitlements on its existing securities.

If an **issuer** establishes pro-rata rights at different percentages, B3 may at its discretion require the securities to trade via different instruments.

1.3. Special rules for trading in securities affected by distribution of entitlements

Any change in the form of **trading** in securities due to the distribution of dividends and other entitlements must follow the procedures established in B3's issuer listing and securities admission to trading rulebook and issuer manual. In the event of non-compliance with the provisions of these normative documents, B3 may suspend trading in the affected **assets** in accordance with the applicable regulations and this trading procedures manual.

Trading in securities without rights to dividends and other entitlements begins on the business day subsequent to the cutoff date set by the **issuer**, as defined in B3's issuer manual, and the instruments concerned are quoted "ex-" for eight consecutive **trading sessions**.

If required by its internal operating procedures, B3 may create an update **corporate event** that entails a new distribution on a **security** without in any way affecting **investors** financially.

2. CASH PRIVATE FIXED-INCOME MARKET

The private fixed-income **assets** traded on the cash market are subject to the **trading**, **auction** and **trading tunnel** procedures described in this trading procedures manual.

Tickers for private fixed-income **assets traded** on the cash market are structured as follows: the first four characters designate the **issuer**, the fifth character is fixed (-), the sixth, seventh and eighth characters designate the type of **asset**, the ninth and tenth characters designate the issue and **series**, and the eleventh and twelfth characters designate the **settlement** mode.

Example: **AAAA-BBCCDD**

Component	Description
AAAA	Issuer of the asset
-	Fixed character
BBB	Type of asset
CC	Issue and series
DD	Settlement mode

Ticker	Asset
CRA	Agribusiness receivables certificates
CRI	Real estate receivables certificates
DCA	Convertible debentures
DEB	Debentures
FIC	Credit rights funds of funds
FID	Credit rights investment funds
LFI	Financial bonds
NPR	Promissory notes
ETF	Private fixed-income ETFs

Settlement mode	Description
B0	Gross settlement T+0
L0*	Netting on T+0
L1*	Netting on T+1
L2**	Netting on T+1

* Not available for CRI, CRA or FID.
** Only for private fixed-income ETFs.

2.1. Trading groups

Trading groups are organized according to the characteristics of fixed-income **assets** and the modes and times for **settlement**, as shown in the table below.

Settlement mode	Group
Gross settlement T+0	0B
Netting on T+0	0L
Netting on T+1	1L
Netting on T+1	2L

3. GOLD SPOT MARKET

Contracts for round and odd lots are traded on the gold spot market.

3.1. Spot gold contract trading instrument

The structure of the spot gold **trading** instrument is as follows: the first two characters designate the contract, the third character designates contract size (1, 2 or 3), and the fourth character shows it is a spot contract (represented by the letter D).

To identify contract size, the number 1 (one) represents the gold spot 250g contract (gold round lot, OZ1), the number 2 (two) represents the gold spot 10g contract (gold odd lot, OZ2), and the number 3 (three) represents the gold spot 0.225g contract (gold odd lot, OZ3).

Example: **AABC**

Component	Description
AA	Contract
B	Contract size
C	Spot

4. DERIVATIVES MARKET

The **derivatives** market involves standardized futures and options contracts admitted to **trading** on B3 and settled in accordance with B3's clearinghouse rulebook and operating procedures manual.

All **orders** and **trades** registered in the trading system for agricultural **derivatives** are disclosed anonymously, i.e. without identifying the participant by trading code, in the market data feed and execution report messages.

4.1. Futures contract

The structure of the futures contract **trading** instrument is as follows: the first three characters designate the contract, the fourth character designates the contract month, and the fifth and sixth characters designate the contract year.

Example: **AAABCC**

Component	Description
AAA	Futures contract
B	Contract month
CC	Contract year

The codes for the fourth character designating the contract month are shown in the table below.

Contract month	Code	Contract month	Code
January	F	July	N
February	G	August	Q
March	H	September	U
April	J	October	V
May	K	November	X
June	M	December	Z

4.2. Futures contract referenced to equities or units

The structure of the futures contract **trading** instrument referenced to **equities** or **units** is as follows: the first four characters designate the **equities** or **units** futures contract, the fifth character designates the type of **equity** or **unit**, the sixth character designates the contract month, and the seventh and eighth characters designate the contract year.

Example: **AAAABCDD**

Component	Description
AAAA	Futures contract referenced to equities or units
B	Type of equity or unit
C	Contract month
DD	Contract year

4.2.1 Rollover Structured Transaction

The structure of the rollover trading instrument is as follows: (i) the first three characters designate the **underlying**, the fourth through sixth characters designate the first contract month (short leg), and the seventh through ninth characters designate the second contract month (long leg), except for the **equities** or **units** futures rollover trading instrument, which is structured as follows: (ii) the first four characters designate the **underlying**, the fifth character designates the type of equity or unit, the sixth through eighth characters designate the first contract month (short leg), and the ninth through eleventh characters designate the second contract month (long leg).

Example: (i) AAABCCDEE

Component	Description
AAA	Underlying asset of futures contract rollover
B	Month of first contract month (short leg)
CC	Year of first contract month (short leg)
D	Month of second contract month (long leg)
EE	Year of second contract month (long leg)

Example: (ii) AAAABCDDEFF

Component	Description
AAAA	Underlying asset of equities or units futures contract rollover
B	Type of equity or unit
C	Month of first contract month (short leg)
DD	Year of first contract month (short leg)
E	Month of second contract month (long leg)
FF	Year of second contract month (long leg)

The types of equities and units, as well as the products authorized for **trading**, are available from B3's portal.

4.3. Options market

The options market involves **trading** in the rights granted to holders of call and put options on equities, domestic and international ETFs, the Bovespa Index (Ibovespa), the Brazil 50 Index (IBrX-50), futures and spot.

Orders in the options market must mention quantity, **series** and premium.

4.3.1. Call and put options on equities, ETFs, Ibovespa and IBrX-50

The structure of the **trading** instrument for call and put options on equities, domestic and international ETFs, Ibovespa and IBrX-50 comprises five letters, the first four of which designate the **issuer's** ticker, with the fifth corresponding to the contract month and option type, as shown in the table below, followed by one or more numbers representing the option **series**.

Example: **AAAABCCC**

Component	Description
AAAA	Ticker
B	Contract month and option type
CCC	Option series , one to three characters

Contract month	Option type	
	Call	Put
January	A	M
February	B	N
March	C	O
April	D	P
May	E	Q
June	F	R
July	G	S
August	H	T
September	I	U
October	J	V
November	K	W
December	L	X

4.3.2. Call and put options on gold futures and spot contracts

The structure of the **trading** instrument for call and put options on gold futures contracts and spot contracts is as follows: the first three characters designate the name of the contract, the fourth character designates the contract month, the fifth and sixth characters designate the contract year, the seventh character designates the option type (C for call and P for put), and the eighth through thirteenth characters designate the strike price.

Example: AAABCCDEEEEE

Component	Description
AAA	Contract
B	Contract month
CC	Contract year
D	Option type
EEEEEE	Strike price

4.3.3. Option writing

Options may be written only in expressly authorized **series** by means of their sale during a **trading session**.

The obligations that arise from option writing are extinguished:

- I - By closeout of the position;
- II - By exercise of the position; or
- III - By expiration of the option if it is not exercised before expiration.

4.3.4. Option style and exercise

Options may be American-style or European-style.

Owners of American-style options can exercise them at any time until expiration, as of the **trading session** subsequent to acquisition. If they do not exercise on or before the expiration date, they lose the right to exercise.

Owners of European-style options can exercise them only on the expiration date. If they do not exercise on the expiration date, they lose the right to exercise.

Options are exercised via a writer's (seller's) position, chosen preferably by a drawing among covered positions or uncovered positions after all covered positions have been used.

Option exercise may be manual, programmed or automatic, in accordance with the option contract specifications, as follows.

- I - Manual exercise: Requested expressly by the owner if the strike price of a call option **series** is lower than the cash price of the **underlying** or if the strike price of a put option **series** is

higher than the cash price of the **underlying**. Even if these conditions are not the case, exercise is allowed if the difference is not material to the **underlying's** price continuity.

- II - Programmed exercise: On the expiration date for options on equities and ETFs, **participants** may register requests to exercise that will be triggered only at a time defined by B3 and if the **underlying's** reference price set by the participant is reached under the following conditions:
- (a) For call options, if the **underlying's** average price weighted by financial volume is equal to or higher than the strike price plus a percentage established by the **participant**, with two decimal places and no rounding;
 - (b) For put options, if the **underlying's** average price weighted by financial volume is equal to or lower than the strike price less a percentage established by the **participant**, with two decimal places and no rounding;
 - (c) If owing to manual exercise at a time set by B3 the quantity registered exceeds the **investor's** position, programmed exercise applies only to the unfilled remainder of the position.

In the case of programmed exercise, an option expires if the exercise request is not executed at the time set by B3 owing to failure to reach the percentage established by the **participant**.

Programmed exercise can be requested only for the expiration date. Not more than five hundred (500) exercise requests can be sent via the **trading** screen.

Registered programmed exercise requests can be canceled before the time set for exercise, without preventing manual exercise.

- III - Automatic exercise: Performed automatically by B3 using the following criteria:

- (a) Call options: if the **underlying's** price on the cash market is higher than the strike price;
- (b) Put options: if the **underlying's** price on the cash market is lower than the strike price.

For options on futures and spot, the holder can choose not to exercise at expiration and hence block automatic exercise.

Manual exercise performed before the time set by B3 and individually or in aggregate equivalent to the **investor's** total position results in immediate expiration of the exercise request.

Writers (sellers) of options on futures and spot may perform purchases for blocking purposes in order to close out their positions by the date specified in the futures or spot contracts concerned.

Times for exercise and blocking purchase, as well as products grouped in terms of the above functionality, can be found on B3's portal.

4.3.5. Registration and settlement of trades

Exercise entails **registration** or cash settlement of buy and sell **trades** in the **underlying** at the strike price, in accordance with the contract specifications.

In the case of options on indices, exercise is automatic, i.e. commanded and processed by B3 as soon as the index concerned has been calculated if:

- I - The index is higher than the strike price, for call options;
- II - The index is lower than the strike price, for put options.

B3 calculates settlement indices daily as the arithmetic average of the values of the index (which are published by B3 every thirty seconds) observed in the last three hours of **trading**, excluding the closing **call**.

The settlement value of an exercise **trade** is equivalent to the difference in local currency between the settlement index and the strike price.

4.3.6. Contract months

Contract months for options vary according to the **underlying**:

- I - Options on equities: all months, expiring on the third Monday of the month;
- II - Options on Ibovespa: all months, expiring on the nearest Wednesday to the 15th;
- III - Options on IBrX-50: even months, expiring on the first business day of the month;
- IV - Options on ETFs: all months, expiring on the third Monday of the month;
- V - Options on futures and spot: expiring as described in each contract and on B3's portal.

4.3.7. Rules on entitlements distribution

In the event of entitlement distribution, the strike price of options on equities admitted to trading, whether or not there are open positions, is adjusted on the day the **underlying** stock begins trading ex- on the cash equity market, in accordance with the following procedures:

- I - In the case of cash entitlements, the strike price is adjusted on the day the stock begins trading "ex-" on the cash equity market by deducting the net value of the dividend from the strike price, and **settlement** is performed at the **underlying** "ex-" price;

- II - In the case of subscription or the exercise of any other preemptive right, the strike price is adjusted on the day the stock begins trading “ex-“ on the cash equity market by deducting the theoretical value of the right. Calculation of the right is based on the last price prior to the “ex-“ date, and settlement is performed with “ex-“ stock;
- III - In the case of bonus issues or any payout in new shares, the quantity, round lot and strike price, as applicable, are adjusted in proportion to the percentage payout.

4.3.8. Gold box spread options

The structure of the gold box spread option **trading** instrument is as follows: the first character is fixed (B for box), the next three consecutive characters designate the contract name, the fifth character designates the contract month, the sixth and seventh characters designate the contract year, and the eighth through thirteenth characters designate the strike price.

Example: **BAAACDDEEEEE**

Component	Description
B	Fixed character designating box
AAA	Option underlying
C	Contract month
DD	Contract year
EEEEEE	Strike price

4.4. INSTRUMENT REGISTRATION

4.4.1. Option on equities and ETFs

B3 permits **trading** in option **series** according to the following criteria:

- I - With regard to style, call options on equities and ETFs may be American- and European-style but puts must be European-style. All options on the Bovespa Index (Ibovespa) and Brazil 50 Index (IBrX-50) are European-style.
- II - The interval between strikes prices for option **series** admitted to **trading** is based on their structure, respecting the table of standard intervals for strike prices and the rules available from B3's portal.
- III - Option **series** can be registered automatically or on request, in accordance with the provisions of this trading procedures manual.
- IV - B3's Market Risk Technical Committee must approve all requests to register option **series** that are not referenced to the equities in the IBrX-100 theoretical portfolio, ETFs, the Ibovespa or

the IBrX-50, as well as requests to register **series** with longer tenors than those permitted by this trading procedures manual.

V - B3 may deregister option **series** that:

- (i) Have not been automatically registered;
- (ii) Were admitted to **trading** at least one month previously;
- (iii) Have no open interest;
- (iv) Have not been traded in the past month.

VI - B3 may at its discretion exclude a **series** with no open interest and reuse its ticker to register a new **series**.

4.4.2. Automatic series registration

The rule on automatic registration of option series is available from B3's portal.

4.4.2.1. Registration of option series by participant request for trading on next day

The maximum tenor for new **series** of options on equities in the theoretical portfolio of the IBrX-100, on ETFs and on indices is twenty-four (24) months as of the current month.

New registration requests must be justified and may be accepted or denied by B3 depending on its assessment.

Requests to create options will not be accepted during the last three business days prior to the expiration dates of outstanding option **series**.

4.4.2.2. Registration of option series by participant request for trading on same day

Registration of option **series** for **trading** in the current **trading session** is allowed if duly justified by the requesting **participant**.

The maximum tenor for new **series** is twenty-four (24) months as of the current month.

B3 is empowered at its sole discretion to accept requests to create options, provided they respect the minimum intervals for strike prices.

Requests to register new options will be accepted if the need to trade on the same day is justified for at least one **series** (call or put) for each strike price requested.

The time limit for requesting the creation of options for **trading** on the same day is one hour before the end of the **trading session**.

The creation of **series** for **trading** on the same day is announced in two notices to the market published with a five-minute interval, so that there is a period of at least ten minutes between the creation of the **series** and its release for **trading**.

The first **trade** in an option **series** created during a **trading session** is submitted to an **auction** lasting at least two minutes on the day of its creation.

Requests to create options will not be accepted in the last two business days prior to the expiration of outstanding option **series**.

4.5. Registration of option series on futures and spot

Call and put options on futures and spot are admitted to trading on B3, which allows registration of new **series** according to the criteria detailed below.

Requests to create **series** of call and put options on financial **derivatives** are accepted only if the options concerned are European-style, except in the case of call and put options on S&P futures.

Requests to create **series** of call and put options on spot gold contracts are accepted only if the options concerned are European-style.

Requests to create call and put options on agricultural **derivatives** are accepted only if the options concerned are American-style.

4.5.1. Registration of option series on U.S. Dollar futures (DOL) and U.S. Dollar volatility structured transaction (VTC)

For options on U.S. Dollar futures (DOL) and the U.S. Dollar volatility structured transaction (VTC), the following criteria are used:

- I - For call and put options with expirations that coincide with the first three futures contract months, **series** will be authorized with strike prices at intervals of BRL 25.00/USD 1,000 regardless of the option deltas;
- II - For call and put options with different expirations from the first three contract months, **series** will be authorized with strike prices at intervals of BRL 50.00/USD 1,000 regardless of the option deltas. The strike price of a **series** will always be a round multiple of BRL 50.00/USD 1,000.

4.5.2. Registration of option series on one-day interbank deposit rate futures (IDI) and interbank deposit spot rate volatility transaction (VID)

For call and put options on one-day interbank deposit rate futures (IDI) and the interbank deposit spot rate volatility transaction (VID), the following criteria are used:

- I - **Series** with expiration dates that coincide with the first three calendar months of DI1 will have minimum intervals of twenty-five (25) index points, and new creation requests will be accepted only on demand with justification by the **participant**;
- II - All requests for the first three contract months will be analyzed by B3 considering the technical and commercial aspects, and if approved will be available for **trading** on the day after approval;
- III - For all other contract months the minimum interval will be one hundred (100) index points.

4.5.3. Registration of option series on one-day interbank deposit rate futures, European style (D11, D12, D13, D14, D15, D16, D18 or D19) and forward rate volatility structured transaction (VF1, VF2, VF3, VF4, VF5, VF6, VF7, VF8 or VF9)

For call and put European-style options on one-day interbank deposit rate futures (D11, D12, D13, D14, D15, D16, D18 or D19) and forward rate volatility structured transactions (VF1, VF2, VF3, VF4, VF5, VF6, VF7, VF8 or VF9), the intervals are 0.25 or multiples thereof.

4.5.4. Registration of option series on S&P futures

For call and put options on S&P futures (ISP), **series** will be authorized with strike prices at intervals of five (5) points and American-style only.

4.5.5. Registration of option series on gold spot contract

For call and put options on the gold spot contract (OZ1), only European-style **series** will be authorized, with strike prices at intervals of at least BRL 1.00 per gram.

4.5.6. Registration of option series on cash-settled crystal sugar futures (ACF), cash-settled live cattle futures (BGI), 4/5 Arabica coffee futures (ICF), 6/7 Arabica coffee futures (KFE), cash-settled hydrous fuel ethanol futures (ETH), cash-settled corn futures (CCM) and cash-settled soybean futures (SFI)

For call and put options on cash-settled crystal sugar futures (ACF), cash-settled live cattle futures (BGI), 4/5 Arabica coffee futures (ICF), 6/7 Arabica coffee futures (KFE), cash-settled hydrous fuel

ethanol futures (ETH), cash-settled corn futures (CCM) and cash-settled soybean futures (SFI), the following criteria are used:

Call and put **series** will be created simultaneously for the same strike price and expiration. Expiration of an option (call or put) will be authorized only if the contract month of the underlying futures has already been admitted to **trading**.

For call and put options on the index of the average rate of one-day repurchase transactions (ITC) referenced to federal government bonds, **series** will be authorized only if there are registered OC1 futures contract months. Otherwise the Risk Committee will analyze the request. The minimum interval for registration of these **series** is one hundred (100) index points.

For contract months in **series** that have already been created, the following rules apply:

- I - New **series** of strike prices may be created, respecting the minimum interval established in the parameters detailed below for creating option **series** on agricultural futures between two strike prices;
- II - **Series** of strike prices already created can be preserved even if they do not comply with the rule in the previous item;
- III - If a structured or arbitrated transaction with the international market requires the creation of a **series** that does not comply with the above criteria, the **full trading participant** concerned must apply to B3 to create the **series**, and B3 is empowered to analyze the request and decided at its sole discretion whether to accept it;
- IV - If an agricultural **derivative** displays an atypical price, B3 may authorize the creation of **series** besides those defined in the parameters detailed below for creating option **series** on agricultural futures.

Parameters for creating option series on agricultural futures						
	Crystal sugar (ACF)	Live cattle (BGI)	Arabica coffee (ICF & KFE)	Corn (CCM)	Soybeans (SFI)	Ethanol (ETH)
Minimum interval	USD 0.25 per bag	BRL 0.50 per arroba	USD 0.25 per bag	BRL 0.25 per bag	USD 0.25 per bag	USD 10.00 per m ³

4.6. Criteria for creating and excluding derivatives contract months

The criteria for creating new contract months of **derivatives** vary according to the type of **derivative** and its **trading** characteristics and are available from B3's portal.

Series and contract months are available for trading only on the next day after creation (T+1).

Authorized **series** and contract months are divided into two categories:

- I - Automatic registration;
- II - Pre-approval, with registration on request by the **full trading participant** and **trading participant**, depending on B3's analysis.

Contract months in the first category are created automatically by B3 with no need for requests by market **participants**. The quantity must be the minimum necessary to guarantee efficient **trading** dynamics and must be concentrated in the most liquid contract months, such as nearby expirations for U.S. Dollar and Ibovespa futures, the start of the year for interest rates, and harvest periods for agricultural contracts, among others.

The second category comprises contract months previously approved by B3 and with trading potential assessed in response to requests from market participants. This entails assessing technical aspects such as the liquidity of the requested contract months and **underlyings**, seasonality and trading characteristics, among others. The list of pre-approved contract months is available from B3's portal.

For requests not covered by the list of pre-approved contract months, B3 may authorize the creation of new contract months based on an analysis of such technical aspects as liquidity, concentration, seasonality and trading history, among others.

4.6.1. Criteria for distributing contract months across trading groups

B3 may classify the contract months in a given **series** into different **trading** groups based on liquidity, so as to distinguish the values used as parameters for **trading tunnels** and activate the **auction** rule for the first **trade**.

Trading groups are divided into three categories:

- I - Low liquidity
- II - Medium liquidity
- III - High liquidity.

Contracts may be configured as a single group, as two groups, or if necessary, as three groups. The classification of contract months into different **trading** groups and the respective **trading tunnel** parameters, as well as activation of the **auction** rule for the first **trade**, can be found on B3's portal and are updated on the last business day of the week.

5. STRATEGY TRADES

Trades may be executed by means of **trading** strategies on the markets for **assets** and **derivatives** in compliance with the **trading** rules described below.

- I - Strategies devised by **investors** are allowed and are automatically priced by the **trading system**, as follows:
 - (a) Determination of the strategy's fair value, understood as the value of the strategy calculated on the basis of the reference price for each of its individual components (the price of the last **trade**, closing price, or reference price in the case of options);
 - (b) Verification of the difference between traded price and fair value;
 - (c) Price adjustments for each of the strategy's individual components.
- II - The prices of options in the **trading system** are calculated using the pricing model defined by B3.
- III - **Orders** originating in strategy **trades** have matching priority even if the price of each of the strategy's individual components is equal to or lower than the price of the best registered **bid** or equal to or higher than the best registered **ask**.
- IV - Strategy **trades** using **assets** in which **trading** has been suspended are not allowed.
- V - Strategy **trades** are publicized using specific **trading** codes and are not subject to **rejection tunnels**.
- VI - Strategy **trades** do not trigger stop **orders** and do not affect the price of the last **trade**, the calculation of indices or **asset** statistics.
- VII - If a strategy **trade** spread leads to prices outside the **trading tunnel** limits for the strategy's individual components, B3 defines the duration of the **auction** at its sole discretion.

The list of strategies is available from B3's portal.

5.1. Procedures

Strategy **trades** must comply with the following procedures:

- I - All strategy **trades** are submitted at an **auction** lasting at least five minutes.
- II - **Orders** at the opening price are not accepted;

- III - Spread **auction** taking **orders** for at least one round lot;
- IV - Box **auction** taking orders for the smallest exposed lot (quantity);
- V - Strategy **trades** can be executed only if **orders** are registered not less than thirty minutes before the end of the **trading session**.

Trades resulting from spread **orders** are submitted to an **auction** lasting at least five minutes, taking orders for at least one round lot. The time limit for **trades** resulting from spread **orders** is thirty (30) minutes before the end of the **trading session**.

Four-leg box spreads are submitted to an **auction** lasting at least five minutes, taking **orders** for at least the smallest exposed lot. Box spreads may be executed with outstanding **series** up to the week prior to expiration. The time limit for **trades** resulting from four-leg box spreads is thirty (30) minutes before the end of the **trading session**.

Forward funding **trades** meeting the criterion of quantity compared with the **issuer's** registered share capital and requiring prior publication of an **auction** notice are submitted to an **auction** lasting at least one hour.

6. FORWARD MARKET

6.1. Trading instrument for forwards on equities, Level 1, 2 and 3 sponsored BDRs and ETFs

Forwards on equities, Level 1, 2 and 3 sponsored BDRs and ETFs admitted to trading on B3 are allowed, for tenors agreed between the parties within the following limits: at least sixteen (16) days and at most nine hundred ninety-nine (999) days.

Forward funding **trades** must be registered at a rate equal to or better than the best rate offered by the market at the time of their registration on the cash market.

Trades that do not comply with this rule will be canceled and submitted to **auction**.

Forwards must be registered with the name of the **underlying**, quantity, price, rate and expiration date, by direct declaration or a declaration sent to the counterparty.

Renewals of forwards cannot be registered with price variations exceeding three per cent (3%) of the price of the last **trade** executed on the cash market.

A forward funding **auction** cannot be held if the **asset** concerned has not been traded on the cash market for at least five **trading sessions** or has a **theoretical price** after paying an entitlement.

Forward funding **trades** are permitted in accordance with the provisions of this trading procedures manual.

Information on minimum and maximum rates, weighted averages and arithmetic means in the forward market are published by B3 in its market data feed and trading bulletin.

6.1.1. Trading instrument structure

The structure of the forward **trading** instrument is the same as the cash market ticker followed by the letter T:

Forward	Character	Example
Regular	T	ABCD4T

6.2. Cash market forward structured transaction (TV)

Forward structured transactions in the cash market (TV) are executed to raise cash and renew already registered forwards. The procedures are detailed below.

- I - A **full trading participant** or **trading participant** C₁, acting on behalf of its **investor**, registers a declaration of purchase in the **trading system** on T₀, specifying:
 - (a) The counterparty, **underlying**, quantity and price of the **trade** on the cash market;
 - (b) The tenor and interest rate for the **trade** to be registered on the forward market.
- II - The **trading system** validates the price of the **trade** on the cash market with the spread agreed on T₀. This price must be equal to or higher than the best **bid** or equal to or lower than the best **ask** registered for the **underlying** on the cash market.
- III - A **full trading participant** or **trading participant** C₂, acting on behalf of its **investor**, registers in the **trading system** on T₁ a declaration of sale opposite to the declaration registered by the **full trading participant** or **trading participant** C₁, specifying the same characteristics of the trade listed in item (i).
- IV - The **trading system** validates the purchase and sale declarations registered, and then (assuming they are validated) registers:
 - (a) A cash market **trade** N₁ that reverses the buying and selling **full trading participants** or **trading participants**, i.e. in which the buyer and seller are **full trading participants** or **trading participants** C₂ and C₁ respectively;

(b) One or more **trades** on the forward market with **full trading participants** or **trading participants** C₁ and C₂ as the buyer and seller respectively and the same specifications as in the purchase and sale declarations registered on the forward market.

V - **Full trading participants** or **trading participants** C₁ and C₂ can be the same.

VI - If the validation procedure performed by the **trading system** detects any divergences in the specifications contained in the registered purchase and sale declarations, the **trading system** does not register the spot market and forward market **trades**.

6.3. Structured transaction involving forward and already registered cash market trade (TVR)

This transaction (TVR) is used to convert a registered cash market **trade** into a forward market **trade**.

After a cash market **trade** N₀ is executed on T₀, with **full trading participants** or **trading participants** C₁ and C₂ as buyer and seller respectively, acting on behalf of their respective **investors**, **full trading participant** or **trading participant** C₁ decides to convert it into a forward market **trade**. This entails a TVR, which is executed as follows:

I - The buying **full trading participant** or **trading participant** C₁ registers a purchase declaration in the **trading system** on T₁ (subsequent to T₀) specifying:

(a) The **trade** N₀ to be converted, the **underlying** and the price;

(b) The quantity of the **asset** (equal to or less than the quantity of the **trade** N₀), the tenor, the interest rate, the selling **full trading participant** or **trading participant** C₃ and the **investor** for the forward to be registered (the same as N₀).

II - The **trading system** validates the conversion by verifying:

(a) Whether the **trade** N₀ and the respective **allocation** have been registered;

(b) Whether the **full trading participant** or **trading participant** that registered the purchase declaration is the buying **full trading participant** or **trading participant** C₁ for the **trade** N₀;

(c) Whether the buying **investor** in the purchase declaration is the buying **investor** for the **trade** N₀.

III - **Full trading participant** or **trading participant** C₃, acting as buyer of the **trade** N₁ to be registered on the cash market and as seller of the **trade** to be registered on the forward market (funder), registers in the **trading system** on T₂ (subsequent to T₁) an opposite declaration to

the purchase declaration registered by **full trading participant** or **trading participant C₁**, i.e. a sale declaration.

- IV -** The **trading system** validates the purchase and sale declarations registered on the forward market by **full trading participants** or **trading participant C₁** and **C₃**.
- V -** If no inconsistencies are detected, the **trading system** registers:
- (a)** One or more **trades** on the forward market, with **full trading participant** or **trading participant C₁** and **C₃** as buyer and seller respectively, in accordance with the specifications in the declarations registered on the forward market;
- (b)** A **trade N₁** on the cash market with the same characteristics as **N₀** but opposite to it, and with **full trading participant** or **trading participant C₃** and **C₁** as buyer and seller respectively. This **trade is not** disclosed via the market data feed.
- VI -** If divergences are found between the specifications in the purchase and sale declarations registered on the forward market by **full trading participants** or **trading participants C₁** and **C₃**, the **trades** mentioned in (i) and (ii) are not registered by the **trading system**.
- VII - Full trading participants** or **trading participants C₁**, **C₂** and **C₃** can be the same.

The following table sums up the **trades** associated with a TVR (PNP= **full trading participant**; PN = **trading participant**).

Trade	Buyer	Seller
N ₀ – cash market	PNP or PN C ₁ Investor X	PNP or PN C ₂ Investor Z
N ₁ – cash market	PNP or PN C ₃ Investor Y	PNP or PN C ₁ Investor X
Forward	PNP or PN C ₁ Investor X	PNP or PN C ₃ Investor Y

6.4. Trading instrument for forwards on gold

The structure of the **trading** instrument for forwards on **Gold** comprises the first three characters of the contract name, followed by the tenor in the fourth through seventh characters.

Example: **AAABBBB**

Component	Description
AAA	Contract
BBBB	Tenor

The criteria for creating new gold forward instruments are as follows:

- I -** Tenors of five calendar days and multiples thereof, limited to thirty (30) days;

II - Tenors of thirty calendar days and multiples thereof, limited to one hundred eighty (180) days.

6.5. Trading instrument for forwards on foreign-exchange swaps

The structure of the **trading** instrument for forwards on foreign-exchange swaps comprises the first three characters of the name of the **underlying**, followed by a fourth character designating the expiration month, a fifth character consisting of the last digit of the expiration year, and a sixth and seventh character corresponding to the day on which the contract expires.

Example: **AAABCDD**

Component	Description
AAA	Underlying with periodic adjustment based on one-day repurchase commitments (repos)
B	Expiration month
C	Last digit of expiration year
DD	Day on which contract expires

The creation of new foreign-exchange swap instruments is established by BCB.

**CHAPTER II – ORGANIZED OVER-THE-COUNTER MARKET AS CENTRALIZED
MULTILATERAL TRADING SYSTEM**

1. GENERAL PROVISIONS

Trading in assets on the **organized over-the-counter (OTC) market** via the **trading system** must observe the applicable **trading** procedures described in Title III of this trading procedures manual, in accordance with the type of **asset** traded.

Order entry and **trade** registration on the OTC market is permitted for **orders** and **trades** with quantities equal to the round lot or multiples thereof, although **order** entry and **trade** registration of odd lots is allowed in the case of certain **assets**.

2. TRADING IN EQUITIES

2.1. Trading instrument

The structure of the **trading** instrument for **equities** traded in round lots on the cash market is shown below. The letter B at the end of the ticker shows that the security is admitted to **trading** on the OTC market.

Type of security	Number	Example
Common stock subscription rights	1	AAAA1B
Preferred stock subscription rights	2	AAAA2B
Common stock	3	AAAA3B
Preferred stock	4	AAAA4B
Class A preferred stock	5	AAAA5B
Class B preferred stock	6	AAAA6B
Class C preferred stock	7	AAAA7B
Class D preferred stock	8	AAAA8B
Common stock subscription receipts	9	AAAA9B
Preferred stock subscription receipts	10	AAAA10B

Tickers for securities **traded** in odd lots are the same as those for the securities traded on the cash market plus the letter F at the end, as shown below.

Type of security	Number	Example
Common stock	3	ABCD3BF
Preferred stock	4	ABCD4BF
Class A preferred stock	5	ABCD5BF

2.2. Ordinary auctions

Ordinary **auctions** held on the OTC market follow the price formation (fixing) rules established by this trading procedures manual.

An **auction** will be held if a **trade** meets the quantity, quotation or tradability criterion. The quality criterion is subdivided into average traded quantity and quantity compared with the **issuer's** registered share capital.

2.2.1. Quantity

2.2.1.1. Average traded quantity

Asset trades that meet this average traded quantity criterion in the last thirty (30) **trading sessions** follow the special procedure described below:

Quantity	Duration
Lot more than ten times average traded quantity	Auction lasting at least fifteen minutes

Once an **auction** has been announced because the above average quantity criterion has been reached, the quantity announced becomes the new valid average quantity for the rest of the **trading session** concerned.

2.2.1.2. Quantity compared with issuer's share capital

The following special procedures apply to **trades** that meet these criteria of quantity compared with the **issuer's** registered share capital:

Quantity	Duration
Lot between 1% and 2.99% of common or preferred shares	Auction lasting at least fifteen minutes
Lot exceeding 3% of common or preferred shares	Auction lasting at least one hour

In this case, even if an **auction** is held, the quantity of **assets** compared with the **issuer's** share capital must comply with the above parameters for the rest of the **trading session**.

2.2.2. Quotation

The quotation parameters that apply to the **organized OTC market** and the relevant special procedures are available from B3's portal.

2.2.3. Tradability

Trades that meet these tradability criteria follow the special procedures described below:

Criterion	Duration
Asset not traded in the last five trading sessions	Auction lasting at least five minutes
First trade in asset on day admitted to trading	Auction lasting at least five minutes
First trade in asset , if not traded on day admitted to trading	Auction lasting at least fifteen minutes
First trade in asset after occurrence of corporate event	Auction lasting at least five minutes

During an **auction**, if the theoretical price reaches one hundred per cent (100%) above the starting price or fifty per cent (50%) below the starting price, the **auction** is extended for fifteen (15) minutes for publication of the new theoretical price.

If a **trade** has to be submitted to **auction** owing to more than one criterion (quantity or **quotation**), the criterion that entails the longest time to publication is chosen.

Notwithstanding the above criteria, B3's Director of Electronic Trading may require a **trade** to be submitted to **auction** (i) if the lot to be traded is atypical; (ii) to assure price continuity; or (iii) for technical or prudential reasons, giving the market advance notice.

Auction procedures are subject to time extensions in accordance with parameters established by B3 and available from its portal.

2.2.4. Analysis of trades in consecutive trading sessions

B3's Director of Electronic Trading conducts periodic analyses to detect, in fifteen (15) consecutive **trading sessions**, situations in which **trades** are concentrated and/or split among two or more **investors** via one or more **full trading participants** and/or **trading participants**. **Trades** that have not yet been settled may be canceled and submitted to **auction** if they configure concentration and/or splitting, in accordance with the provisions of B3's trading rulebook and the applicable regulations.

If the sum of the **trades** executed in more than one **trading session** displays concentration, only the **trades** that exceed the quantity criteria in this trading procedures manual will be canceled and submitted to **auction**.

If there are registered **orders** at the same price as the **auction** price, the **orders** relating to canceled **trades** have priority for matching at the same price.

If a canceled **trade** involves a security for which a **corporate event** has occurred, the **auction** price is adjusted.

Cancellation of **trades** and their submission to **auction** does not apply to:

- I - **Day trades** that do not display evidence of having been executed with intent to transfer **positions** between two or more **investors**;
- II - **Trades** executed by **market makers**;
- III - **Trades** involving strategies with **assets** and their **derivatives**;
- IV - Situations in which the liquidity of an **asset** increases without impairing its price formation;
- V - Forward funding **trades**;
- VI - **Trades** with a financial value of less than fifty thousand Brazilian Reais (BRL 50,000).

Uncanceled **trades** that display concentration and/or splitting are sent to CVM and BSM for analysis.

3. TRADING IN FIXED-INCOME ASSETS

3.1. Trading instrument structure

The structure of the **trading** instrument for private fixed-income **assets** is as follows: the first four characters designate the name of the **asset**; the fifth character is fixed (-); the sixth, seventh and eighth characters designate the **asset** type; the ninth and tenth characters designate the issue and **series**; and the eleventh and twelfth characters designate the **settlement** mode.

Example: **AAAA-BBBCCDD**

Component	Description
AAAA	Issuer
-	Fixed character
BBB	Asset type
CC	Issue and series
DD	Settlement mode

Asset name	Description
CRA	Agribusiness receivables certificates
CRI	Real estate receivables certificates
DCA	Convertible debentures
DEB	Debentures
FIC	Credit rights funds of funds
FID	Credit rights investment funds
LFI	Financial bonds
NPR	Promissory notes
ETF	Private fixed-income ETFs

Settlement mode	Description
OB	Gross OTC on T+0

3.2. Trading group

Given the existence of only one settlement mode (gross OTC on T+0) on the **OTC market**, fixed-income **assets** belong to only one trading group (9F).

3.3. Auction tunnel

B3 may at its sole discretion refrain from applying **auction tunnels** to fixed-income **assets** on the **organized OTC market**.

4. EX-PIT TRADES

Ex-pit trades are not submitted to market intervention as their purpose is to close out **positions** created by forwards in the following cases:

- I - **Trades** characterized as hedging;
- II - **Trades** executed to arbitrate prices in effect on other organized securities markets, including those located abroad;
- III - **Trades** executed to permit closeout of **positions** held by **investors** declared to be in default or with difficulties to settle executed **trades**.

In situations (i) and (iii) above, B3 may authorize the **registration** of **cross trades** in agricultural **derivatives**.

The following procedures are required to register an **ex-pit trade**:

- I - The **full trading participants** and/or **trading participants** concerned file documents proving the **trade's** existence by the end of the **trading session** prior to execution of the **trade**. If B3

rejects the documentation, it can be rectified by the **full trading participants** and/or **trading participants**;

- II - The **full trading participants** and/or **trading participants** supply details of the **ex-pit trade** on the **registration** date;
- III - The **investors** named in the **registration** details must be the contracting parties to the forward contract.

Ex-pit trade financial volume is disclosed in the market data feed, but is not included in the statistics published by the **trading system** and does not affect the settlement prices of **derivatives**. Registered **ex-pit trades** are published in B3's trading bulletin and on its portal, with details of quantity, price, **derivative** and **full trading participant** and/or **trading participant**.

CHAPTER III – SPOT FOREIGN-EXCHANGE MARKET

1. GENERAL PROVISIONS

Trades are executed in the spot foreign-exchange **trading environment** via **participants** authorized to provide intermediation services for these **trades** by entering **bids** and **asks** for United States Dollars (USD).

2. TRADING INSTRUMENT

The structure of the **trading** instrument for spot foreign-exchange **trades** is as follows: the first three characters designate the contract name; the fourth character designates the mode; and the fifth through eighth characters designate the time to **settlement**.

Example: **AAABCCCC**

Component	Description
AAA	Market
B	Mode
CCCC	Time to settlement

3. TRADING

Trading groups are organized in accordance with the times to settlement established by BCB and can be found on B3's portal.

4. ROUND LOT AND TICK SIZE

The round lot is fifty thousand U.S. Dollars (USD 50,000). **Orders** and **trades** must be in multiples of round lots, limited to twenty-five million U.S. Dollars (USD 25,000,000).

Tick size is available from B3's portal.

5. ORDER TYPES AND DISCLOSURE

Only limit **orders** valid for the same day can be entered and must identify the **investor**.

All **orders** and **trades** registered in the **trading system** for spot foreign-exchange **trades** are disclosed anonymously in the market data feed, i.e. without the **participant's trading** code.

Spot foreign-exchange **trades** are not submitted to **auction** owing to their operational characteristics.

6. REJECTION TUNNEL

Spot foreign-exchange **trades** are subject only to the type 2 rejection tunnel, whose center is defined as follows:

- I - The price used is the price of the last **trade**, updated every minute;
- II - If no **trades** are executed in a **trading session**, the price used is the closing price for the previous **trading session**;
- III - If no **trades** were executed in the previous **trading session**, the price used is the registration price on the **organized OTC market**.

TITLE IV – FINAL PROVISIONS

CHAPTER I – SANCTIONS AND PRUDENTIAL MEASURES

Notwithstanding the sanctions established by B3's trading rulebook, B3 is empowered to apply the following prudential measures.

1. INFRINGEMENT OF PROCEDURES OR INADEQUATE USE OF CONNECTIONS

In the event of infringement of the procedures established by B3 or inadequate use of **connections**, B3 may at its sole discretion:

- I -** Issue a written warning to the **full trading participant** and/or **trading participant** involved;
- II -** Immediately block the **connections** involved;
- III -** Limit the flow of **orders** from the **full trading participant** and/or **trading participant**;
- IV -** Review the Execution Broker seal awarded by the Operational Qualification Program (PQO) to the responsible **full trading participant**.

2. INFRINGEMENT OF THE RULES FOR USING THE PRE-TRADING RISK CONTROL TOOL OR INADEQUATE USE OF RISK LIMITS

In the event of infringement of the rules for using the pre-trading risk control tool or inadequate use of the risk limits assigned by **full trading participants** and/or **trading participants** to **investors**, B3 may at its sole discretion:

- I -** Issue a written warning to the **full trading participant** and/or **trading participant** involved;
- II -** Immediately block any **connections** used by investors classified as high-frequency traders (HFTs) and not connected to the pre-trading risk control tool;
- III -** Limit the flow of **orders** from the **full trading participant** and/or **trading participant**;
- IV -** Take other prudential measures to mitigate operational and counterparty risks.

CHAPTER II – APPEALS AGAINST SANCTIONS

Application of the sanctions called for by B3's trading rulebook and this trading procedures manual is always preceded by written notification sent electronically to the **full trading participant, trading participant** and **trade registration participant** involved, as applicable, assuring the right to a full adversarial defense.

This notification must set a time limit for the presentation of a defense, granting not less than fifteen (15) calendar days, and name the person or entity responsible for the infringement. The defense must be sent electronically to B3.

B3 analyzes the defense and then communicates its decision to the **full trading participant, trading participant** and **trade registration participant** involved, as applicable, setting a time limit for the infringement to be remedied if it has concluded that an infringement did indeed occur and if the infringement has not already been remedied.

A request for a review containing a clear and reasoned exposition of its rationale must be filed within fifteen (15) calendar days of B3's notification of its decision.

Observing article 101 of B3's trading rulebook, a review request must be filed with suspensive effect, if applicable: (i) with the Chief Operating Officer (COO) in the case of a penalty applied by the Director of Electronic Trading; or (ii) with the Chief Executive Officer (CEO) in the case of a penalty applied by the COO.

The review request is analyzed and a final decision, which must be fully reasoned and cannot be appealed, is communicated to the **full trading participant, trading participant** and **trade registration participant** involved, as applicable.

A penalty originally applied by the CEO or Board of Directors in accordance with B3's trading rulebook can be appealed to the instance that applied the penalty by filing a petition that contains a clear and reasoned exposition of its rationale within fifteen (15) calendar days of B3's notification of the original decision.

Application of the sanctions established by B3's trading rulebook takes into account the nature and gravity of the infringement, the harm done to the market and **participants**, advantages gained by the offender, prior infringements of any rules and procedures established by B3's trading rulebook and this trading procedures manual, and any repeated offending, characterized when a **full trading participant, trading participant** or **trade registration participant**, as applicable, commits an offense after an unappealable conviction for the same offense.

Penalties imposed in compliance with the provisions of B3's trading rulebook and this trading procedures manual must be communicated to CVM, BSM, BCB, and other regulatory authorities, where necessary.

CHAPTER III – NOTICES TO THE MARKET

B3 publishes news via the **trading platform**, in messages sent to email addresses previously registered by **full trading participants** and **trading participants**, via an instant messaging application and on B3's portal.

B3 also publishes a daily bulletin entitled *Boletim de Negociação* containing details of the day's **trades**, options exercised and open interest in the derivatives markets. Data on the following is published separately: box spread **trades**, **ex-pit trades** and **trades** executed during the **after-market** session.

B3 also uses its daily bulletin to publish normative acts and other information it deems useful to the market.

CHAPTER IV – SUPPLEMENTARY RULES

B3's Director of Electronic Trading is empowered to issue rules to supplement this trading procedures manual and to take any measures necessary to assure full compliance herewith.

All rules and regulations published by B3 enter into immediate effect as of their signature or the date established by the publications concerned.

The usages and customs accepted by the market apply subsidiarily to this trading procedures manual.

ANNEX I

MINIMUM CONTENTS OF RULES AND ACTIVITY PARAMETERS FOR FULL TRADING PARTICIPANTS AND TRADING PARTICIPANTS

The rules and activity parameters for **full trading participants** and **trading participants** shall govern at least the following:

- I - Accreditation;
- II - The types of **order** accepted;
- III - **Order** entry times;
- IV - The form of **order** issuance, including the accepted instant messaging services;
- V - The policy for **trading** by related persons and own portfolio **trading**;
- VI - The duration of **order** validity;
- VII - The procedures for refusing and cancelling **orders**;
- VIII - **Order** registration procedures;
- IX - **Order** execution procedures (execution, non-execution and confirmation), including those for **orders** received via "home broker" online trading software;
- X - **Trade** distribution procedures, including rules on brokerage and tripartite give-up;
- XI - **Trade settlement** procedures;
- XII - Risk control;
- XIII - **Asset** custody;
- XIV - Voice recording;
- XV - Communication with **investors** on changes to the rules and activity parameters.

Notwithstanding the above, the rules and activity parameters for **full trading participants** and **trading participants** shall require compliance with the following principles:

- I - Probity in the conduct of their activities;

- II - Assurance of market integrity, including with regard to the selection of **investors** and compliance with collateral requirements;
- III - Capacity to perform the activities concerned;
- IV - Diligence in executing **orders** and specifying **investors**;
- V - Diligence in controlling **investor** positions in custody, with routine reconciliation of:
 - (a) Executed **orders**;
 - (b) Positions shown in account statements provided by the custody service provider;
 - (c) Positions shown by clearinghouses;
- VI - The obligation to provide **investors** with the information required for **order** execution;
- VII - Implementation of measures to prevent the execution of **trades** involving conflicts of interest and assure fair treatment of **investors**;
- VIII - Timely provision of **trade** documentation to **investors**.

ANNEX II

MINIMUM CONTENTS OF INTERMEDIATION AGREEMENTS OR EQUIVALENT INSTRUMENTS

Full trading participants and **trading participants** shall enter into intermediation agreements or equivalent instruments in order to execute **trades** on behalf of **investors**, in accordance with the applicable regulations. Such agreements must contain at least the clauses listed below.

- I - The parties to the agreement undertake to comply with the following as and when applicable: the legislation in force; B3's standards and procedures as defined in its bylaws, rulebooks, manuals, and circular letters; the rules and parameters governing the **participant's** activities; and any specific rules issued by government authorities that may affect the terms of the agreement.
- II - The **investor** must keep current the registration details it supplies to the **participant** or foreign intermediary, as applicable, and file the information and documents required for this purpose whenever asked to do so.
- III - For prudential reasons the **participant** may at its sole discretion refuse to receive or execute all or part of the **investor's orders** and may cancel any **orders** entered but not yet executed.
- IV - The **investor** undertakes to maintain its account with the **participant** and keep it in funds, complying with the timeframe established by the **participant** so as to discharge all its obligations or ensure that they can be discharged.
- V - The **investor** acknowledges and agrees that if its account contains insufficient funds or if it fails to effect payment for transactions within the timeframe stipulated by the **participant**, the **participant** may use the funds or credits it administers and holds on the **investor's** behalf to pay down or offset the sums owed by the **investor**, regardless of any notification.
- VI - In order to discharge the **investor's** obligations regarding which it is a creditor or guarantor, the **participant** may use as it sees fit any of the **investor's assets** and rights it may hold.
- VII - In order to discharge the **investor's** obligations, the **participant** may sell or order the immediate sale at the market price of any of the **assets** acquired on the **investor's** behalf or posted as collateral by the **investor**, including the positions and **assets** linked to the **investor's** obligations in the markets operated by B3.

- VIII -** The **investor** acknowledges and agrees that if it fails to settle debts arising from transactions performed on the markets operated by B3, it will be included in the list of defaulting **investors** and be banned from **trading** until said debts are settled, in accordance with the applicable rules issued by B3.
- IX -** The **investor** will be considered non-defaulting only upon confirmation that the funds in question have been received by (i) the **participant**, (ii) the **participant's clearing member**, and (iii) B3. Notwithstanding the terms of provisions (V), (VI) and (VII) above, the **investor's** collateral may be foreclosed (i) by the **clearing member**, if it does not receive from the **participant** the amount required to settle the transactions performed by the **investor**; and (iii) by B3, if it does not receive from the **clearing member** the amount required to settle the transactions performed by the **investor**.
- X -** If the **investor** uses a connectivity session for access to the **trading system**, the **investor** declares that it is aware that the password for logging on to the system is personal, non-transferable and for its exclusive use, and that transactions performed via this system using this password will be deemed to have been performed by the **investor**. The **participant** must report any suspicion of improper use of the **investor's** password to B3 and BSM, blocking the password if necessary, until the reason for its improper use is discovered and remedied.
- XI -** All conversations between the **investor** and the **participant** and its agents (including independent investment agents) by telephone, email, instant messaging or the like will be recorded and stored for five (5) years, or longer in the event of administrative proceedings brought by CVM, B3 or BSM, and the stored recordings may be used as evidence to clarify any questions relating to the **investor's** account and transactions.
- XII -** If there is a relationship between the **investor** and any agents, including independent investment agents linked to the **participant**:
- (a)** The **investor** must not deliver or receive any cash, securities or other **assets** to or from any agents, including independent investment agents linked to the **participant**;
 - (b)** The **investor** must not make any payments to agents, including independent investment agents linked to the **participant**, for the provision of any services;

- (c) No agents, including independent investment agents, may act as the **investor's** attorney-in-fact or representative to the **participant** for any purpose;
 - (d) The **investor** may not engage any agents, including independent investment agents linked to the **participant**, to provide portfolio management, consulting or securities analysis services, whether paid or free of charge;
 - (e) The **investor** may not give passwords or electronic signatures to agents of the **participant**, including independent investment agents linked to the **participant**.
- XIII -** The standard intermediation agreement for **investors** who trade **derivatives** must also contain clauses providing for the following:
- (a) The value of open positions is updated every day in accordance with the settlement prices for that day established according to B3's rules. In acting as a buyer in the futures market, the **investor** risks having its position negatively adjusted if prices fall. In acting as a seller in the futures market, the **investor** risks having its position negatively adjusted if prices rise. In either case, daily cash payments will be required to cover such variations in positions, as well as margin calls at the discretion of B3 and/or the **participant**;
 - (b) The **participant** may at its discretion:
 - (i) Limit the quantity of open positions held on the **investor's** behalf and close them out if they exceed the limit set;
 - (ii) Close out all or some of the **investor's** positions;
 - (iii) Foreclose the collateral posted in the investor's name;
 - (iv) Sell or buy the contracts required to settle open positions in the **investor's** name.
- XIII -** At all times the **participant** may at its discretion:
- (a) Increase margin requirement, including for positions held on the **investor's** behalf;
 - (b) Require the **investor** to post advance daily margin calls;
 - (c) Require any additional collateral deemed necessary;
 - (d) Require substitution of posted collateral, including for positions already registered and collateralized.

- XIV** - The **investor** must post additional collateral and substitute posted collateral in compliance with the timeframe, terms and conditions established by the **participant**;
- XV** - Maintenance under certain circumstances of locked or opposite positions in the same **participant**, whether in the options or futures markets, does not eliminate the market risk associated with such positions.
- XVI** - An **investor** who buys options risks the following:
- (a)** As the buyer of a call option, losing all or part of the premium paid if the option's intrinsic value (the difference between the price of the **underlying** and the strike price, if positive) is less than the premium paid for the option;
 - (b)** As the buyer of a put option, losing all or part of the value of the premium paid if the option's intrinsic value (the difference between the strike price and the price of the **underlying**, if positive) is less than the premium paid for the option;
- XVII** - An **investor** who writes options risks the following:
- (a)** As the writer of a call option, taking losses directly associated with a rise in the price of the **underlying** in the cash market;
 - (b)** As the writer of a put option, taking losses directly associated with a fall in the price of the **underlying** in the cash market;
- XIV** - Open positions in futures and options may be settled by difference, via an equivalent but opposite transaction (purchase or sale) that realizes a profit, limits a loss or avoids exercise. However, liquidity conditions may hinder or prevent performance of an opposite **trade** in the requisite timeframe or at the desired price when linked to a limit order;
- XV** - In the event of situations not foreseen in derivatives contracts traded by the **investor**, government measures, or any other extraordinary factors that affect the formation, manner of calculation or publication of their variables, or entail their discontinuation, B3 will at its discretion take the steps it deems necessary to liquidate the **investor's** position or maintain it on an equivalent basis.