INFORMATION SIGNAL

Version: **5.7.0.0**

BOVESPA

Brazil's Stock Exchange

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This Manual introduces Information Signal Users to the solution for distributing "Information Signal", a data channel which make possible the reception of the information produced by BOVESPA in real-time and worldwide.

This electronic data channel carries the following data: BOVESPA stock market (electronic trading session), Over-the-Counter Market, as well as information regarding to BTC (Securities Lending Program), and the BOVESPA FIX (Fixed Income Private Securities Trading System). In addition to these data, all news referring to BOVESPA and CBLC are available on NBC.

This solution for Information Signal distribution originated in MEGA BOLSA (BOVESPA´s Electronic Trading System) and the aim is to attend to the growing volume of transactions and messages. At the same time, it improves data recovery time if the BOVESPA MEGA BOLSA Trading System servers connections to Brokers are down and it reduces delays in the flow of real time data to end-users.

The content of this Manual should be studied by managers and employees of the institutions using the Information Signal who are directly involved with developing and handling information.

This Manual is subdivided as follows:

- *Objective: introduce users to the use and purpose of the Manual, its objectives, definitions and procedural rules.*
- *Subsequent chapters: Receiving Data, Message Structure, Annexes and Modification Histories.*

When necessary, BOVESPA will inform users who have received this Manual of any updates or revisions to chapters.

Support for institutions involved in this process, such as issues relating to technical support, will be provided by BOVESPA call center (referred to locally as CAB) on (+55 11) 3233 2333 or by e-mail: cab@bovespa.com.br.

Commercial or contractual issues should be referred to Service Development Supervision on (+55 11) 3233-2105, Fax (+55 11) 3233 2423 or e-by mail: Sinal_Bovespa@bovespa com br.

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HISTORICAL MODIFICATIONS

Due to recent updating and aiming to maintain the quality of all services provided to our clients, we are publishing version 5.7.0.0 of this user manual.

MEGA837 - V5.7.0.0

- **HEADER (cap 3.5.1.1)**

  Inclusion of new register codes. → New

- **Reference Price (cap 3.5.2.6)**

  Inclusion of new chapter. → New

- **5 Best Limits (cap 3.5.2.9)**

  Inclusion of new chapter. → New

MEGA837 - V5.6.0.0: 11/13/2008

- **Retransmit the order book (cap 2.2.14)**

  Change message type → Update

- **Updating order book (cap 2.2.15)**

  Update message type → Update

  Previous offer identification → Exclusion

  Identification of next offer → Exclusion

  Order TimeStamp → New

  Reserved → Exclusion

  Length of Text in Body of Message → Update

  Change of possible values in "Type of price registered" field → Correction

- **Cancellations in order book (cap 2.2.16)**

  Change message type → Update

  Reserved → Exclusion

  Length of Text in Body of Message → Update

- **All or Nothing offers (cap 2.2.19)** → Exclusion

- **Exclusion of all or Nothing offer (cap 2.2.20)** → Exclusion

MEGA380 – V5.5.0.0: 05/23/2008

- **Updating order book (A3)**

  Previous offer identification → Update

  Identification of next offer → Update

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MEGA380 – V5.4.0.0: 04/07/2008

- **Stock referential data (53) (cap 2.2.13)**

  Deletion of "Market Type" field → Exclusion

  Number of Shares → Update

  Average Quantity / Last Trade Sessions → Update

  Frozen Parameters for Cross Trades → Update

  Frozen Parameters for non Cross Trades → Update

- **Annex C – Market type (cap 3.3)**

  Deletion of Annex → Exclusion

- **Opening trade (01) (cap 2.2.1)**

  Change of possible values in "Origin of Trade" field → Correction

- **Trade (02) (cap 2.2.2)**

  Change of possible values in "Origin of Trade" field → Correction

MEGA 380 – V5.3.0.0: 04/10/2007

- **Message Text (cap. 2.2)**

  BM&F Signal (Z2) → Exclusion

  Fixed Income - BM&F Sisbex (Z4) → Exclusion

- **Presentation**

  BM&F and SISBEX Signal → Exclusion

  Technical contact e-mail → Correction

- **Hardware and Software Configuration (cap. 4.3)**

  Change in the minimum configuration → Update

  Inclusion of the recommended configuration → Update

- **Functional Architecture (cap. 1.3.1)**

  Deletion of "Link 256 k" of the drawing → Update

- **Annex E (cap. 3.5)**

  Update on the following items because the implantation of RCCF:

  - General Description;
  - Equipments;
  - Function;   → Update
  - Security;
  - Management;
  - Contingency;

- **Configuration Parameters (cap. 1.1.6)**

  Inclusion of new parameters - HubWindowSize and SlcWindowSize → New

MEGA380 – V5.1.0.0: 10/27/2005

- **Opening Trade 01 (cap 2.2.1)**

  Deletion of value of "Trade origin" → Deleted

- **Trade 02 (cap 2.2.2)**

  Deletion of Note and value of "Trade origin" → Deleted

  Inclusion of fields in table → Correction

- **Price update 03 (cap 2.2.3)**

  Inclusion of fields in table "Field Name" → Correction

- **Five best limits 04 (cap 2.2.4)**

  Deletion of 'Note' → Deletion

  Correction and Inclusion of fileds in table "Field Name" → Correction

  Correction of "Definition/Purpose" → Corretion

- **Annex C (cap 3.3)**

  Deletion of field 9 → Deletion

- **Annex D (cap 3.4)**

  Deletion of field 98 → Deletion

MEGA380 – V5.0.0.3: 07/06/2005

- ❖ **Message Structure (cap 2)**

  Functional header (cap 2.1) → Correction

MEGA380 – V5.0.0.2: 05/24//2005

- ❖ **Message Structure (cap 2)**

  Functional header (cap 2.1) → Correction

- ❖ **BOVESPA´s monitoring agent (cap 1.4)**

  Monitoring → New

- ❖ **OCX Component (cap 1.2)**

  SPF_Header in *OnReceiveData* event → New

MEGA380 – V5.0.0.1: 04/26/2005

- ❖ **ProxyDIFF**

  New structure for feed reception → New

- ❖ **Message Z6**

  SOMA → Deleted

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MEGA380 - V4.0: 08/09/2004

❖ **Message Z1**

BTC Securities Lending Program → New

MEGA380 - V3.1: 05/14/2003

❖ **Message 01 e 02**

Id of buying and selling member → New

MEGA380 - V3: 04/11/2003

❖ **Message 01**

This is not sent for "Market Segment = 02 e 08" → Update

❖ **Message 03**

Added value "35 = Must be discarded" in field Type of Price. Used by Bovespa. → Update

❖ **Message 16**

1. Added value "R = After-Market session" in field Stock Group State → Update

2. For "Market Segment = 02 and 08" (Forward) the field "Stock Group State = N" means: it is in Market Session State. → Update

❖ **Message 30**

1. Unfilled quantity side at opening price → New
2. Unfilled quantity at opening → New

❖ **Message A0**

Order Book Rebroadcasting – available only after 2003-Jun-02 → New

❖ **Message A3**

1. Type of Price Registered corrections → Update
2. Added value "S = Limit Price Order" in the field Type of Price Registered → New

MEGA380 - V2: 03/10/2003

❖ **Message A3**

Added value "X = At best order" in the field Type of Price Registered → New

❖ **Message 09**

Message 09 – Presence (System is on) → New

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MEGA380 - B1: 10/04/2002

❖ **For Mega Bolsa 380 the following messages were excluded::**

A1 – Forward Order Book Update
A2 – Order Price Marking
A5 – Deletions in the Order Book (Forward Market)
09 – Presence (System is on)

❖ **For Mega Bolsa 380 the following messages were included::**

D3 – All or none offers
D4 – Exclusion of All or none offers

Format modification of field "Price" of all messages. Added Field Format in AnnexA

Format modification of field "Variation" of all messages.

❖ **Message 53**

Added Option Maturity Time field

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1 - OBJECTIVE

Guide users on use of Information Signal in order to enable those interested to handle BOVESPA data relating to their markets.

2 - APPLICATION

The Manual applies to Information Signal users.

3 - DEFINITIONS

3.1 - TERMS/NOMENCLATURE

3.1.1- Information Signal user

Institution that receives Information Signal and is authorized to disclose and/or distribute the data or a certain part of the data to its customers.

3.2 - DATA PROVIDED BY THE INFORMATION SIGNAL

3.2.1 - Quotations

Quotations of the stock trading on all BOVESPA markets (cash, forward, options and futures), including companies listed on Novo Mercado (New Market) and Corporate Governance Levels 1 and 2 segments which feature stricter rules for disclosure and publication, with enhanced minority shareholder rights.

3.2.2 - BOVESPA indices

All BOVESPA indices: Ibovespa, main indicator of the Brazilian stock market; Brazil Index (Índice Brasil - IBX), comprising the 100 most-traded shares in the cash market; the (IBX-50), composed by 50 shares selected among the more traded in BOVESPA in liquidity terms; the Electricity Index (locally IEE); the Bovespa Value Index (IVBX-2), which measures the return on a portfolio consisting exclusively of stocks issued by companies favored by investors; the Differentiated Corporate Governance Stock Index (IGC); the Telecommunications Sector Index (ITEL), the Corporate Sustainability Index (ISE), the Industrial Sector Index (INDX) and the Special Tag Along Stock Index (ITAG).

3.2.3 - News

All news relating to BOVESPA, Over-the-Counter Market and CBLC (Brazilian Clearing and Depository Corporation), the main products and services of these two institutions, plus data on transactions, indices, quotations, bids and asks and a range of information on the market and listed companies.

3.2.4 - BOVESPA

Information on MEGA BOLSA (BOVESPA Trading System).

3.2.5 - BOVESPA FIX

Information on BOVESPA FIX, the integrated environment for trading, settlement, and custody of private fixed-income securities.

3.2.6- The Over-the-Counter Market

Information on securities traded on the Over-the-Counter Market.

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3.3 – COMMERCIAL POLICY

Information Signal may be leased in two ways: directly from BOVESPA, with the advantage of the exchange's full infrastructure and technical support for data reception, or through "carriers" ("vendors" acting as intermediaries providing Information Signal services).

4 - SYSTEM RULES

4.1 - POINTS RELATING TO SYSTEM FUNCTIONALITY

System functionality is organized daily with several phases. Each phase corresponds to a specific state of the system during which some shares are authorized to operate and others not. Some phases are simultaneous for all quotation groups, while others develop specific schedules for each group. They are shown as follows:

4.1.1 – Start of *day*

This is the first phase of the day, and applies to all quotation groups. The aim is to allow users' systems to update by processing messages produced automatically by the system (for instance, preparing data for a stock after distribution of dividends). No intervention by Brokers is allowed during this phase.

4.1.2 - Preparing Quotation Groups

The timing of this phase is defined for each quotation group, and will be used by BOVESPA to audit the situation of the quotation system and for any interventions (canceling offers of a stock or a Broker, if necessary). The system is not yet available for intervention by brokers.

4.1.3 - Pre-opening phase

The timing of this phase is defined for each quotation group.
This is the first phase in which brokers may come in with offers that may only be executed in the following phase. Following parameters defined by BOVESPA, the system may or may not accept an offer. Furthermore, in the case of acceptance of offers, in all cases following BOVESPA recommendations, the system will reject or accept the latter to build a theoretical price.

4.1.4 - Opening phase

The timing of this phase is defined for each quotation group. During this phase, depending on the definitions for the groups, opening trades will take place.

4.1.5 – Regular Trading phase

The timing of this phase is defined for each quotation group. This is the traditional phase of quotation in the Trading Hall or through terminals. During this phase, offers, statements of trades or trades against previously registered offers will be introduced.

4.1.6 - Pre-closing phase

When a stock in a group is in a prolonged fixing, the group does not go on directly to the state of BOVESPA intervention, but to Pre-closing, in which the entry of offers is the same as during Pre-opening.

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4.1.7 - BOVESPA Intervention phase

The timing of this phase is defined for each quotation group. This phase is for BOVESPA interventions (corrections, for instance).

4.1.8 - "After Market" Trading phase

Only shares with a base price established in the regular trading phase and belonging to markets authorized by the Exchange may be traded during this phase.

4.1.9 - Close of day phase

During this phase, no intervention is possible, since it is the end of activities.

4.1.10 - Night processing phase

This phase is for batch update operations and maintenance of the Mega Bolsa system (BOVESPA's Electronic Trading System). For instance, during this phase, the system processes creations, cancellation, or modifications of stocks, as well as indications of distribution of dividends for the following day.

4.2 - RESPONSIBILITIES

4.2.1 - BOVESPA

Arrange for updated versions of this Manual and provide technical support.

4.2.2 - Service

Provide support and procedures for solutions requested by telephone (+55 11) 3233 2333/2105.

4.3 - HARDWARE AND SOFTWARE CONFIGURATION

Minimum configuration required for installing and using the Information Signal:

- Pentium III 900 MHz
- 512 MB RAM memory
- OS Windows 2000 / XP

Recommended:

- Pentium IV 2.0 GHz
- 512 MB de RAM memory
- OS Windows XP

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1 – RECEIVING INFORMATION

1.1 – PROXYDIFF RECEIVER

ProxyDiff receivers distribute broadcast messages to Information Signal users' systems.

This receiver is divided in two quite distinct parts:

- One part receives broadcast messages from the HUB;
- The other distributes messages to one or more applications.

1.1.1 – General description

On starting, the ProxyDiff receiver follows these steps:

1. Reads configuration file;
2. Starts a thread to await MMTP connections from Information Signal user's programs;
3. Starts an MMTP connection to HUB.

1.1.2 – Treatment of HUB connections

This chapter describes MMTP connections established between the ProxyDiff receiver and HUB.

TCP Connections Established.

On initializing, the ProxyDiff receiver attempts to establish a TCP connection with HUB using the parameters *HubPort* and *HubIpAddr*.

Example of message recorded in LogFile:
2005/05/12 07:13:01.410 ProxyDiff ##### Connection established with the HUB (125.255.44.40:18401)

MMTP Connections Established

When the connection with HUB is established, the ProxyDiff receiver sends an MMTP connection request to HUB using *HubSubscriber* and *HubPassword* for identification.

Example of message recorded in LogFile:
2005/05/12 07:13:01.410 ProxyDiff ##### Send connection request to the HUB (subscriber 'HUBIPRX0234', options '0101000000000000'

If HUB accepts this request for access, the ProxyDiff receiver will send a request to <u>start</u> data reception.

If there is a faulty connection, the ProxyDiff receiver will attempt to connect to HUB until the latter is reestablished.

Requests for broadcast messages

When an MMTP connection is established, the ProxyDiff receiver requests the messages for broadcast.
There are two possibilities for this request, which depend on the existence and validity of the file where the messages for broadcast are stored.

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1.1.3 – Nonexistent file

The ProxyDiff receiver sends an initial MMTP request with empty MsgId (blanks). This means that it wishes to receive all broadcast messages for the day.

Example of message recorded in LogFile:
2005/05/12 07:13:01.930 ProxyDiff ##### Send start request to the HUB (MsgId '')

If the initial request is rejected, the ProxyDiff receiver closes (the Information Signal user should contact BOVESPA).

If HUB accepts the initial request, it sends broadcast messages from the beginning to the last one current.

The ProxyDiff receiver creates the file in which broadcast messages will be stored, using *MaxMsgFiles* and *NbMsgPerFiles* parameters. The file directory is defined by the *MsgFilePath* parameter and its name is the name of the HUB subscriber (defined by the *HubSubscriber* parameter) followed by *.msg*.

In the example, if *HubSubscriber* is SUBS001 and *MaxMsgFiles* is 3, the following files will be created:
1 . *SUBS001.msg*, which contains private information,
2 . *SUBS001.msg.idx01*, *SUBS001.msg.idx02*, *SUBS001.msg.idx03* which are the index files;
3 . *SUBS001.msg.dat01*, *SUBS001.msg.dat02*, *SUBS001.msg.dat03* which are the data files.

1.1.4 – Existing file

In this case, the ProxyDiff receiver searches the MsgId file for the last broadcast message received in the last connection, and uses it in initial request for messages to HUB.

Sample message saved in LogFile:
2005/05/12 17:02:25.650 ProxyDiff #0000 Try to open '/home/sl234/proxyd/data/HUBIPRX0234.msg' message file
2005/05/12 17:02:25.670 ProxyDiff #0000 Try to open context file '/home/sl234/proxyd/data/HUBIPRX0234.msg.ctx'
2005/05/12 17:02:25.670 ProxyDiff ##### Restoring context file '/home/sl234/proxyd/data/HUBIPRX0234.msg.ctx'
2005/05/12 17:02:25.670 ProxyDiff ##### Send start request to the HUB (MsgId '20050512A0000074858')

If HUB rejects the initial request, the receiver removes the file and functions as described above. (see chapter 1.1.3).

But if HUB accepts the request, it starts sending broadcast messages based on the message after the one in MsgId corresponding to the initial request.

Processing broadcast messages

After HUB accepts the initial request, it begins to send data messages and stores the message

Sample message saved in LogFile:
2005/05/12 17:02:25.750 ProxyDiff #0000 Message received from HUB (MsgId: '20050512A0000074859', DataSize: 213)
2005/05/12 17:02:25.750 ProxyDiff #0000 Message received from HUB (MsgId: '20050512A0000074860', DataSize: 213)

When previous tasks are completed, messages will be stored in the broadcast messages file ready to be sent to the Information Signal users' programs.

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Saving Information

The ProxyDiff receiver regularly saves to disk information from broadcast messages received (see parameter *SaveContextInterval*).

The information file is named for the HUB subscriber (see *HubSubscriber* parameter) followed by *".msg.ctx*".

If the data file already exists (this is always the case, except for the first time), it is renamed by adding *".bak"* at the end before creating a new file.

Monitoring and Supervision

The ProxyDiff receiver regularly calculates and records statistics on reception of broadcast messages (see monitoring parameter).

The format for these statistics is *LMR:x;TSR:x;RTA:n;MRT:n;HST:n,n,n,n,n;*.

The following table describes the different fields comprising this information:

Token	Description
LMR	**L**ast **M**essage **R**eceived MsgId of last message received from HUB.
TSR	**T**ime **S**tamp of **R**eceipt Time of last message received from HUB. The format is *MMDDhhmmsscc* where *MM* is month, *DD* day, *hh* hour, *mm* minutes, *ss* seconds and *cc* hundredths of seconds.
RTA	**R**esponse **T**ime **A**verage (since the last statistics logged) Response time from sending of message by HUB to reception through the ProxyDiff receiver.
MRT	**M**aximum **R**esponse **T**ime (since last statistical data sent) Maximum response time.
HST	**H**ISTORY of **R**esponse **T**ime (since the last statistical data stored). History of response time. This is a sequence of five numerical values separated by commas, each showing the number of messages received with response time in this interval. The five intervals are: $0<=n<=500$ ms, $500<=n<=1000$ ms, $1000<=n<=1500$ ms, $1500<=n<=2000$ ms, $2000<=n$.

Example of message recorded in LogFile:
2005/05/12 16:12:25.670 ProxyDiff ##### HUB statistics:
LMR:20050512A0000054900;TSR:051216122565;;RTA:19918440;MRT:25257390;HST:0,0,0,0,22527;

1.1.5 – Treatment of Connections

This chapter describes the connections between the receiver ProxyDiff and OCX Bovespa (*BovSinalXControl1.ocx*)

Sending Messages for Broadcast

As soon as a connection is received and accepted, the ProxyDiff receiver starts to send broadcast messages (see chapter 3.2 - Use of OCX component).

Monitoring and Supervision

The ProxyDiff receiver regularly calculates and logs statistics on reception of broadcast messages by Information Signal users (see parameter *MonitoringInterval*).
The format for these statistics is *LMS:x;TSS:x;RTA:n;MRT:n;HST:n,n,n,n,n;*.

The following table describes the different fields comprising this information:

Token	Description.
LMS	**L**ast **M**essage **S**ent MsgId of the last message sent to Information Signal users.
TSS	**T**ime Stamp of **S**ending Time of last message sent to Information Signal user. The format is *MMDDhhmmsscc* where *MM* is month, *DD* day, *hh* hour, *mm* minutes, *ss* seconds and *cc* hundredths of seconds.
RTA	**R**esponse **T**ime **A**verage (since the last statistics logged) Average response time in thousandths of seconds. MsgId of the last message sent to Information Signal users.
MRT	**M**aximum **R**esponse **T**ime (since the last statistics logged) Maximum response time in thousandths of seconds.
HST	**H**ISTORY of **R**esponse **T**ime (since last statistics logged) History of response times. This sequence of five numerical values separated by commas, each showing the number of messages received, and response time in the interval. The five intervals are: $0 <= n <= 500$ ms, $500 <= n <= 1000$ ms, $1000 <= n <= 1500$ ms, $1500 <= n <= 2000$ ms, $2000 <= n$.

Example of message recorded in LogFile:
2005/05/12 16:13:14.950 ProxyDiff.Slc.00007 ##### SLC statistics:
LMS:20050512A0000002343;TSS:051216131459;;RTA:50906115;MRT:50912330;HST:0,0,0,0,2342;

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1.1.6 – Configuration parameters

The first task the ProxyDiff receiver does is read the configuration file (parameter *CfgFile*). If this reading fails due to the lack of an obligatory parameter or an invalid parameter value, the process terminates.
This chapter describes each parameter.

CfgFile

The parameter is only sent to the program using a command line. It reports the path and name of the configuration file to be used to the program. If the path is omitted, the current directory will be used to find the file. If the parameter is not supplied, the program will attempt to use a *proxydiff.cf* file in the current directory.

Pi

Parameter *Pi* is just a command line argument. It allows specification of multiples values for any parameter in the configuration file, selecting the value to be used through the *Pi* argument on starting the program. Parameters with multiples values are suffixed with the '#' character then with the value of the *Pi* parameter.

For instance, when the following lines are found in the configuration file:
- *TraceLevel*=5
- *TraceLevel #Test*=6
- *TraceLevel #Debug*=7

The *TraceLevel* parameter will be 6 when the *Pi* parameter is in 'Test' mode, 7 when in 'Debug' mode, or 5 when the *Pi* is missing or is in another mode.

Log parameters

LogPipe

Contains the output name where trace messages will be sent (see *Hublogd* documentation). If this parameter is missing, empty or indicating non-existent output, trace messages will be stored in the file shown by the *LogFile* parameter. This parameter does not have a default value.

LogFile

Contains the path and name of the file where the trace messages will be stored if the *LogPipe* parameter is undefined or indicating non-existent output. If the parameter is omitted, the trace messages will be shown on the screen.
If the path is omitted, the file will be created in the ProxyDiff' receiver directory. The screen will be used as default.

ⓘ **Important:** The path must be created beforehand. See chapter 1.5.2.

TraceLevel

Indicates message trace levels. The lower the value, the more detailed trace messages will be. Expected values range from 5 to 7.

LogName

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The *LogName* parameter is used when more than one ProxyDiff receiver is running on the same computer using the same *LogPipe* parameter. It allows supply of a unique identifier which will be used in the trace messages. The default value for this parameter is "ProxyDiff *receiver."*

Parameters - HUB connection

HubPort

TCP port used by the program to establish connection with HUB.
This parameter is obligatory.

HubIpAddr

HUB's IP address. This is also obligatory.

HubTimeout

The number of seconds delay HUB accepts to respond to an MMTP request. If HUB exceeds this delay in responding, the connection is considered lost and the MMTP request canceled.
Expected values range from 0 to 3600 (0 indicates that there is no timeout). The default value is "60" (1 minute).

HubCheckAliveTimeout

The timeout in seconds after which an MMTP connection between a program and HUB is considered lost if there is no message received. Expected values range from 0 to 7200 (0 indicate that there is no timeout). If the value is greater than 0 and less than 10, 10 is used, the default value is "60."

HubCnxInterval

The minimum number of seconds pause between two attempts to connect to HUB. Expected values range from 0 to 3600 (0 indicates that there is no timeout). The default value is "5".

RemoveSpfHeader

RemoveSpHeader removes the SPF header from broadcast messages sent to SLC.
Default value is "false".

HubCompressionEnabled

Not used by Information Signal users.

HubSubscriber

Shows the name of the subscriber used in the MMTP connection request sent to the HUB.
This parameter is obligatory.

HubPassword

Shows the subscriber password used in the MMTP connection request sent to the HUB.
This parameter is also obligatory.

HubWindowSize

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Means Window synchronization size, which is the number of messages sent between SYNC-REQ requests, used in the MMTP connection with the HUB.
Expected value range from 1 to 1000. The default value is 50.
It is not mandatory.

Connection parameters for Information Signal users

SlcPort

Shows the TCP port in which the process expects connections from Information Signal user programs.
This parameter is obligatory.

SlcTimeout

The delay in seconds allowed Information Signal user programs to respond to an MMTP request. If a Information Signal user exceeds this delay, the connection is considered down and the MMTP request canceled.
Expected values range from 0 to 3600 (0 indicates that there is no timeout). The default value is "60" (1 minute).

SlcCheckAliveTimeout

The timeout in seconds after which an MMTP connection between an application and the Information Signal user's program is considered lost if no message is received. Expected values range from 0 to 7200 (0 indicates that there is no timeout). If the value is greater than 0 and less than 10, 10 is used. The default value is "60".

MaxSlc

The maximum number of Information Signal users that can be connected simultaneously to a ProxyDiff receiver.
Expected values range from 1 to 100. The default value is "10".

SlcWindowSize

This parameter means Window synchronization size, which is the number of messages sent between SYNC-REQ requests, used in the MMTP connection with the Information Signal users program.
Expected value range from 1 to 1000. The default value is 50.
It is not mandatory.

Trace parameters - MMTP protocol

MmtpLogPipe

The name of the output file to which MMTP protocol trace messages will be sent. If the parameter is missing, empty or indicating non-existent output, trace messages will be stored in the file shown by the *MmtpLogFile* parameter. This parameter does not have a default value.

MmtpLogFile

The path and name of the file where MMTP protocol trace messages will be stored if the *MmtpLogPipe* parameter is indefinite or indicating non-existent output. If the parameter is omitted, trace messages will be stored in the default file. (see Hublogd documentation). If the path is omitted, the file will be created in the ProxyDiff receiver directory. The default value for this parameter is *" ProxyDiff.trc.*"

① **Important:** The path should be created beforehand. See chapter 1.5.2.

HubTracesEnabled

Enables or deactivates MMTP protocol traces for MMTP connections to the HUB. By default, this characteristic is deactivated.

SlcTracesEnabled

Enables or deactivates MMTP protocol traces for MMTP connections with Information Signal user programs. By default, this characteristic is deactivated.

Parameters of the broadcast messages file

MsgFilePath

Shows the path to write the file that contains the broadcast messages received from the HUB. If this parameter is missing or empty, the file will be created in the ProxyDiff receiver directory.

① **Important:** The path must be created beforehand. See chapter 1.5.1.

MaxMsgFiles and NbMsgPerFile

The file where broadcast messages from HUB are received is cyclical. This means that this file contains a certain number of messages (*NbMsgPerFile* parameter) and a certain number of files (*MaxMsgFiles* parameter). When this file is complete, each new message takes over the place of the old message in the file.

Expected values for the *MaxMsgFiles* parameter range from 2 to 100. The default value is "10".

Expected values for the *NbMsgPerFile* parameter range from 1000 to 100 000 000. The default value is "1 000 000."

① **Important:** these values must be high enough to allow at least one full day of broadcast messages.

SaveContextInterval

Shows the interval in minutes between 2 saved contexts.
Expected values range from 1 to 60. If this parameter is set at 0, this option is deactivated (not recommended). The default value is "1".

Various parameters

MonitoringInterval

Shows the delay in seconds between 2 calculations of statistics. Expected values range from 0 to 3600. The default value is "60".

1.2 – *USE OF OCX COMPONENT*

The purpose of the OCX Component **BovSinalXControl1.ocx"** is to enable Information Signal users to develop their applications without the need to know MMTP communication protocol.

The following are implementation data for the OCX component:

BovSinalXControl1.ocx

Properties*:*

Ack: Boolean. Indicates to issuer that it can send the next message.

IpAddr: String, IP Address of the MMTP message server process.

Port: Integer. MMTP connection port.

Methods:

The methods used for opening and closing the connection to BOVESPA are as follows:

Connect( ): Responsible for allocation of the resources required and beginning of connection with the ProxyDiff receiver.

StartRequest(MsgId: String) Requests registration based on the latest handled (MsgId), to start a retransmission, since the start of day. Pass "Blanks".

Disconnect( ): Responsible for closing the connection with the ProxyDiff receiver.

Events*:*

OnAcceptStart( ):

OnConnect( ): Occurs when the component is connected to ProxyDiff receiver.

OnDisconnect(Const Desc: String): The ProxyDiff receiver procedure disconnected client.

OnError(Error: Integer; Msg, Desc: String): Generated by any anomaly taking place during the connection process or during exchange of messages.

OnReceiveData(Const LastMsgId : String , SPF_Header : String, DataPtr : Pointer; DataSize : Integer): Occurs when MEGA BOLSA (BOVESPA's Electronic Trading System) sends a broadcast message.
NB: SPF_Header for future use

OnStarted( ): Occurs after call from "StartRequest" method.

1.3 – INFORMATION SIGNAL

1.3.1 – Functionality architecture
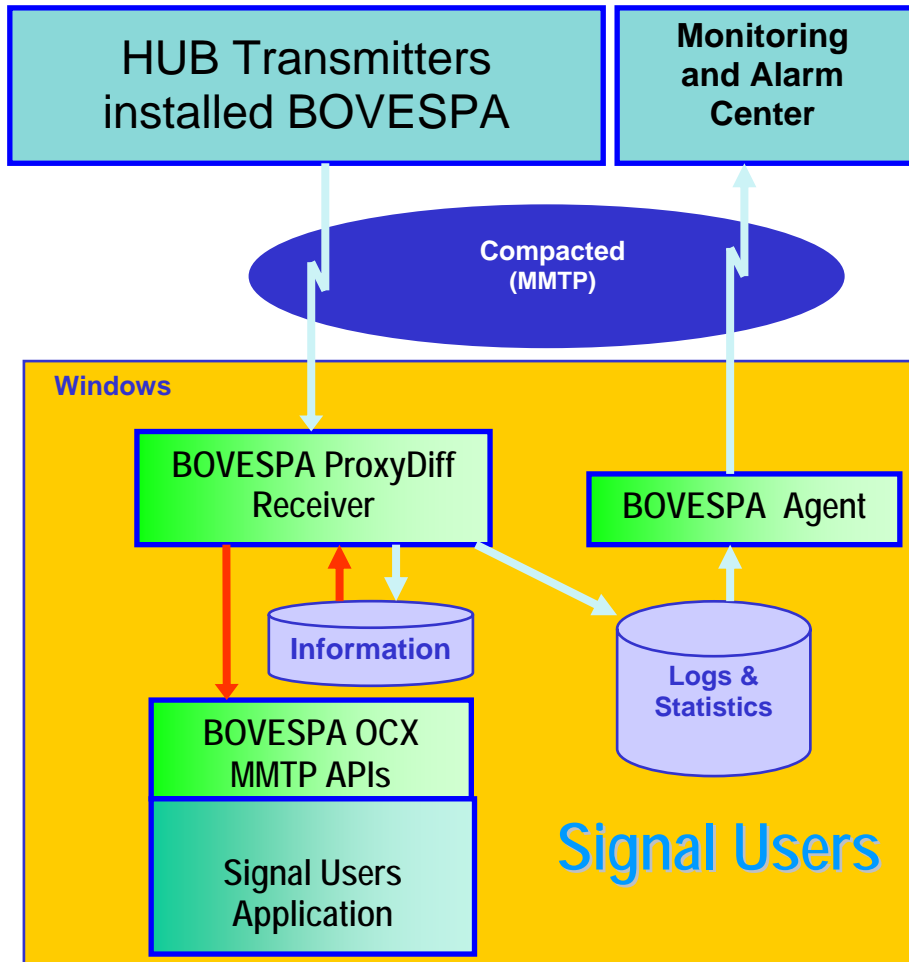
1.3.2 – Functionality characteristics

All messages received from different origins (BOVESPA, SOMA, BTC, BM&F, etc.) have a single identifier called MsgID.

Requests to OCX Bovespa and treatment of messages by Information Signal users' applications must be made by MsgID.

MsgID may not be sequential, in other words, it will depend on the type of filter each receiver has.

Bovespa transmitters and receivers use MMTP protocol to ensure integrity so that there is no loss of messages.

MsgID format : (YYYYMMDDsnnnnnnnnnnn)

        s = session
        n = identification number
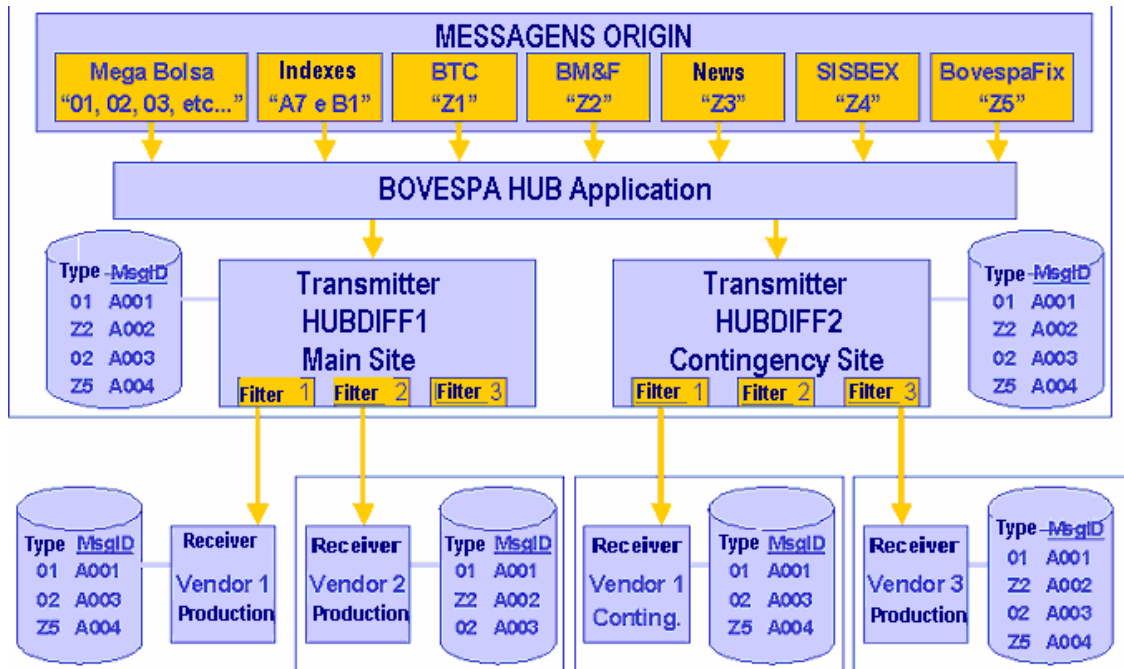
1.4 – BOVESPA MONITORING AGENT

1.4.1 – General description

Bovespa's Monitoring Agent monitors ProxyDiff connections and disconnections and other information of the type:

- Last message sent to Information Signal users;
  2005/05/12 16:13:14.950 ProxyDiff.Slc.00007 ##### SLC statistics:
  LMS:20050512A0000002343;*TSS:051216131459;;RTA:50906115;MRT:50912330;HST:0,0,0,0,2342;*

- Time of last message sent Information Signal users;
  2005/05/12 16:13:14.950 ProxyDiff.Slc.00007 ##### SLC statistics:
  *LMS:20050512A0000002343;***TSS:051216131459;;***RTA:50906115;MRT:50912330;HST:0,0,0,0,2342;*

- Average response time for receiving and sending messages to Information Signal users;
  2005/05/12 16:13:14.950 ProxyDiff.Slc.00007 ##### SLC statistics:
  *LMS:20050512A0000002343;TSS:051216131459;;***RTA:50906115;***MRT:50912330;HST:0,0,0,0,2342;*

- Maximum response time for Information Signal user;
  2005/05/12 16:13:14.950 ProxyDiff.Slc.00007 ##### SLC statistics:
  *LMS:20050512A0000002343;TSS:051216131459;;RTA:50906115;***MRT:50912330;***HST:0,0,0,0,2342;*

- History of response time for Information Signal user;
  2005/05/12 16:13:14.950 ProxyDiff.Slc.00007 ##### SLC statistics:
  *LMS:20050512A0000002343;TSS:051216131459;;RTA:50906115;MRT:50912330;***HST:0,0,0,0,2342;***

- Last message received by HUB;
  2005/05/12 16:12:25.670 ProxyDiff ##### HUB statistics:
  LMR:20050512A0000054900;*TSR:051216122565;;RTA:19918440;MRT:25257390;HST:0,0,0,0,22527;*

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- Time of last message received by HUB;
  2005/05/12 16:12:25.670 ProxyDiff ##### HUB statistics:
  *LMR:20050512A0000054900;**TSR:051216122565;;**RTA:19918440;MRT:25257390;HST:0,0,0,0,22527;*

- Average response time for receiving and sending messages on the HUB;
  2005/05/12 16:12:25.670 ProxyDiff ##### HUB statistics:
  *LMR:20050512A0000054900;TSR:051216122565**;;RTA:19918440;**MRT:25257390;HST:0,0,0,0,22527;*

- Maximum HUB response time;
  2005/05/12 16:12:25.670 ProxyDiff ##### HUB statistics:
  *LMR:20050512A0000054900;TSR:051216122565;;RTA:19918440;**MRT:25257390;**HST:0,0,0,0,22527;*

- History of HUB response time;
  2005/05/12 16:12:25.670 ProxyDiff ##### HUB statistics:
  *LMR:20050512A0000054900;TSR:051216122565;;RTA:19918440;MRT:25257390;**HST:0,0,0,0,22527;***

1.4.2 – Configuration Parameters

The first task the Monitoring Agent Bovespa (AgenteBovespa.exe) does is read the configuration file (AgenteBovespa.cf). If this reading fails due to an obligatory parameter being missing or a value invalid, the process will attempt to connect to a standard Monitoring server defined by BOVESPA.
This chapter describes each parameter:

[Server1]
Where information from server 1 will be inserted.

IP
Ip of Monitoring server 1

Port
Port of Monitoring server 1

[Server2]
Where information from server 2 will be inserted.

IP
Ip of Monitoring server 2

Port
Port of Monitoring server 2

NB: BOVESPA will inform values for these parameters using the Technical Form.

1.5 – FILE MAINTENANCE

1.5.1 – Data Files

The data recorded by the ProxyDiff receiver defined by the *MsgFilePath* parameter should be stored in files big enough to support information of at least one full day's trading. Therefore we recommend that each file is approximately equivalent to a full-day session.

We suggest the values *MaxMsgFiles=7 and NbMsgPerFile=1000000*, for Information Signal users to keep approximately one week's data on their servers. If a Information Signal user so wishes, this value may be altered depending on their needs.

① **Important:** At the time of connecting with ProxyDiff, check that MsgId data received by the program of the Information Signal user corresponds to the current date, otherwise, the messages will be ignored by the program. This type of situation may arise if the ProxyDiff receiver has not yet received any message for the current date.

1.5.2 – Log files

Log files kept in the directories defined by the variables *MmtpLogFile* and *LogFile* should be renamed at the end of the day, or before restarting a new day in the ProxyDiff receiver.

Bovespa Monitoring Agent (AgenteBovespa.exe) does this automatically in the following way:

- At the beginning of every new day (run AgenteBovespa.exe start), the previous day's log files are renamed with their names plus the extension of the current date.

Therefore, we suggest Information Signal users use Bovespa Monitoring Agent as their tool for purging and storing log files. It should be configured to start automatically at the beginning of the day before ProxyDiff receiver starts, and should be closed at the end of the same day.

2 – MESSAGE STRUCTURE

This chapter describes the content of messages to be distributed to Information Signal users.
Messages consist of two parts:

Functional header	Body of the Message

2.1 – FUNCTIONAL HEADER

Compr	Position	Type	Description.	Value
3	1	X	Reserved	
2	4	X	Message Type	See item 2.2
6	6	N	Reserved	
2	12	N	Quotation Group	See ANNEX B
12	14	X	Stock Code	
8	26	X	Reserved	
8	34	N	Date of Event	YYYYMMDD
6	42	N	Time of Event	HHMMSS

2.2 – BODY OF THE MESSAGE

Next come "layouts" by field "Message Type" described in item 2.1 - Functional Header:

2.2.1 – Opening trade (01)

Objective

This message informs Information Signal users of opening trades for a certain stock:

Field name	Type	Compr
Quantity traded	N	12

Trade Price
    Price Format
    Price
	
	X
	N
		
		1
		13

Identification of Buyer Broker	X	8
Identification of Seller Broker	X	8
Quantity securities traded - Accumulated in Day	N	12
Reserved	X	11
Indicator End of Trades at Opening Price	N	1
Reserved	X	2
Indicator of variation in relation to previous price	X	1
Trade Number	N	7
Reserved		3
Market Segment	X	2
Reserved	X	86
Date of Trade (YYYYMMDD)	N	8
Time of Trade (HHMMSS)	N	6
Origin of trade	X	1

Variation in relation to previous day's closing price
    Format Indicator
    Variation
	
	X
	N
		
		1
		13

Length of Text of Body of Message		196

Field name

- **Quantity Traded**

   Definition/Purpose

Indicate total of stock traded in a transaction.

- **Trade price**

  Definition/Purpose
  Inform price of execution of trade.

  - **Format Indicator**
    See Annex A.

  - **Price**
    Price at which trade was made.

    Note: These messages are valid only for "Market Segments" other than 02 and 08 (Term Market).

- **Quantity of securities traded - Accumulated on the day**

  Definition/Purpose
  Quantity of a certain stock traded on MEGA BOLSA (BOVESPA's Electronic Trading System) during the current day.

  - **Possible values**
    An initial value of 0 (zero), that increases with each trade of the stock concluded during the day.

- **Indicator for end of trading at opening price**

  Definition/Purpose
  Define whether this message is the last of the opening.

  - **Possible values**
    "0" = this message is not the last.
    "1" = this message is the last.

- **Indicator of variation in relation to previous price**

- **Trade number**

  - **Definition/Purpose**
    Created by MEGA BOLSA (BOVESPA's Electronic Trading System), for stock.

- **Market Segment**

  - **Definition/Purpose**
    See Annex C.

- **Date trade took place**
  (YYYYMMDD)

- **Time trade took place**
  (HHMMSS)

- **Origin of trade**

- **Definition/Purpose**
Indicates where trade was made.

- **Possible values**

Unlike **"S"** = indicates that the trade was made in the Electronic Session.
"S" = indicates that the trade was made by MEGA BOLSA Control.

- **Variation in relation to previous day's closing price**

- **Definition/Purpose**
Percentage variation between last price of day and previous day's closing price.

- **Format Indicator**
See Annex A.

2.2.2 – Trade (02)

Objective

This message informs Information Signal users of a trade for a certain stock if different from the opening trade.

Field name	Type	Compr.
Quantity traded	N	12

Trade Price
     Price Format
     Price
	
	 X
	 N
		
		 1
		 13

Identification of Buyer Broker	X	8
Identification of Seller Broker	X	8
Quantity securities traded - Accumulated in Day	N	12
Reserved	X	8

Highest Price Quoted on the day
     Format Indicator
     Price
	
	 X
	 N
		
		 1
		 13

Lowest Quoted Price on the day
     Format Indicator
     Price
	
	 X
	 N
		
		 1
		 13

Type of Registration	N	2
Reserved	X	4
Origin of trade	X	1
Reserved	X	2
Indicator of variation in relation to previous price	X	1
Trade Number	N	7
Reserved		3
Market Segment	X	2
Reserved	X	69
Period for settlement - in days	X	4
Reserved		13
Date trade took place (YYYYMMDD)	X	8
Time trade took place (HHMMSS)	X	6

Continuation:

Field name	Type	Compr.
Variation in relation to previous day's closing price Format Indicator Value of Variation	X X	1 13
Reserved		16
Length of Text of Body of Message		242

Field name

- **Quantity Traded**

  - **Definition/Purpose**
    Indicates total of stock traded in a transaction.

- **Trade price**

  - **Definition/Purpose**
    Inform price of trade executed.

  - **Format Indicator**
    See Annex A.

  - **Price**
    Price at which trade was made.

- **Quantity of securities traded - Accumulated on the day**

  - **Definition/Purpose**
    Quantity of a certain stock traded on MEGA BOLSA (BOVESPA's Electronic Trading System), during the current day.

  - **Possible values**
    An initial value of **"0"** (zero) that increases with each trade made for the stock during the day.

- **Highest Price Quoted on the day**

- **Lowest Price Quoted on the day**

- **Origin of trade**
  - **Definition/Purpose**
    Indicates where trade was made.

  - **Possible values**

    Unlike **"S"** = indicates that the trade was made in the Electronic Session.
    "S" = indicates that the trade was made by MEGA BOLSA Control.

- **Type of Registration**

- **Definition/Purpose**
Indicates creation or cancellation of a trade.

- **Possible values**
  "00" = Cancellation.
  "07" = Creation.

- **Indicator of variation in relation to previous price**

- **Trade number**

  Created by MEGA BOLSA (BOVESPA's Electronic Trading System), for stock.

- **Market Segment**

  See Annex C.

- **Period for settlement - in days**

 - **Definition/Purpose**
 For forward trades, indicates period for settlement in days.

- **Date trade occurred**

- **Time trade occurred**

- **Variation in relation to previous day's closing price**

  - **Definition/Purpose**
  Percentage variation between last price of day and previous day's closing price. This field does not exist for stock traded in the forward market.

2.2.3 – Price Update (03)

Objective

This message informs Information Signal users of changes occurring in stock price:

Field name	Type	Compr.

Last Price of the Day
    Format indicator
    Price
	
	X
	N
		
		1
		13

Highest Price Quoted
    Price format
    Price
	
	X
	N
		
		1
		13

Lowest Price Quoted
    Format indicator
    Price
	
	X
	N
		
		1
		13

Price type	N	2
Reserved	X	6
Indicator of variation in relation to previous price	X	1

Variation in relation to previous day's closing price
    Format indicator
    Value of Variation
	
	X
	N
		
		1
		13

Reserved	X	6
Length of Text of Body of Message		71

Field name

- **Last Price of the Day**

- **Highest Price Quoted**

- **Lowest Price Quoted**

- **Price Type**

  - **Definition/Purpose**
    Indicates the type of operation described in this message.

  - Possible values
    "30" = alteration of first price.
    "31" = New highest price.
    "32" = New lowest price.
    "33" = New last price.

"34" = New previous day's closing price.
"35" = BOVESPA internal use. Ignore.

NB When there are updates in the fields Higher or Lower Price Quoted, this field has value 31 or 32. The other values of this field indicate alteration in the Last Price of the Day field.

- **Indicator of variation in relation to previous price**

- **Variation in relation to previous day's closing price**

  - **Definition/Purpose**
    Percentage variation between last price of day and previous day's closing price.

2.2.4 – Five Best Offer Prices (04)

Objective

This message informs Information Signal users of alterations in the five best offers associated with a certain stock.

A "FIVE BEST OFFER PRICES" message may be sent even if no "DISCLOSURE OF BID OR ASK PRICE" message is sent, whereas a "DISCLOSURE OF BID OR ASK PRICE" message is usually accompanied by a "FIVE BEST OFFER PRICES" message.

Field name	Type	Compr
Reserved	X	7
Indicator of Best Offer Prices that have been altered	X	6
Information on Best Offers Best Prices tables (fields below may occur up to six times)		
Total quantity bids	N	12
Number of bids	N	4

One of the best bid prices
     Format indicator
     Price
	
	X
	X
		
		1
		13

One of the Best ask prices
     Format indicator
     Price
	
	X
	X
		
		1
		13

Number of asks	N	4
Total quantity asks	N	12
Reserved	X	2
Length of Text of Body of Message	max =	385

Field name

- Indicator of the best bids/asks that have been altered
  - **Definition/Purpose**
    The indicator is a six-character field. The first five characters show whether or not there was an alteration in the five best offers. The sixth character shows whether the market summary was generated by MEGA BOLSA (BOVESPA's Electronic Trading System), during pre-opening.

  - **Possible values**
    Each of the six characters in the indicator has value of 1(one) if the price of the corresponding offer was altered and 0 (zero) otherwise. Only offers that have been altered are included in this message, which leads to variation in the length of the text in the body of the message.

- **Total quantity bids**

- **Definition/Purpose**
Total quantity of offers at a certain price.

NB If the total quantity of the bid is equal to or greater than 999,999,999,999, the quantity shown will be 999,999,999,999.

- **Number of bids**

- **Definition/Purpose**
Number of bids for the given price

- **One of the best bids or asks prices**

- **Definition/Purpose**
Limit for best bid or ask price.

- **Possible values**
Comprising the price and its format, or
Indication of opening price ("OUV");
Indication of Offer at best price ("MX").

- **Number of asks**

- **Definition/Purpose**
Number of asks for given price.

- **Total quantity asks**

- **Definition/Purpose**
Total quantity of offers at given price.

NB.: If the total quantity of the ask is equal to or greater than 999,999,999,999, the quantity indicated will be 999,999,999,999.

2.2.5 – Change of Stock Status (05)

Objective

This message shows Information Signal users the changes in the status of a stock:

Field name	Type	Compr
Trading status of the stock	X	1
Reserved	X	16
Status of stock	X	1
Stock type	X	1
Opening time (HHMMSS)	N	6
Reserved	X	23
Length of Text in Body of Message		48

The table below shows the main combinations of events that may occur - others may be ignored. The "- " character means that the data in this field are of no importance.

Trading status of stock	Status of stock	Stock type	Description.
-	S	-	Suspended
-	G	-	Frozen
-	-	I	Inhibited (Offers forbidden)
H, B, P, R	R		Stock reserved for auction or extension of the latter
-	Space	Other than "I"	Opening of stock
-	-	R, P	Show scheduled / rescheduled time for opening stock

2.2.6 – Start of Trading Day (07)

Length of Text in Body of Message	**0**

This message informs Information Signal users of the start of trading on MEGA BOLSA (BOVESPA's Electronic Trading System). Due to the characteristics of the system, more than one opening message may be generated each day.

2.2.7 – Closing of Day (08)

Length of Text in Body of Message	**0**

This message informs Information Signal users of the close of trading on MEGA BOLSA (BOVESPA's Electronic Trading System). Due to the characteristics of the system, more than one closing message may be generated each day.

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2.2.8 – System on the Air Warning (09)

Length of Text in Body of Message	0

This message will be sent every minute in order to inform Information Signal users that the system is active.

2.2.9 – Alteration of Quotation Group Status (16)

Objective

This message shows Information Signal users alterations in a quotation group condition. There will be as many messages sent as collectors used for a group and each message will specify the existing number of collectors for each group (see Annex B):

Field name	Type	Compr
Quotation Group Code	X	2
Quotation Group Condition	X	1
Number of Collectors Used by the Group of Quotation	N	2
Reserved	X	23
Length of Text in Body of Message		28

Field name

- **Quotation Group Code**

  - Definition/Purpose
  Identifies stock that belongs to a same group and same trading schedule.

  - Possible values
  See Annex B.

- **Quotation Group Condition**

  - Definition/Purpose
  Indicates trading phase in which a group is found or a special condition attributed by BOVESPA (interrupted or inhibited).

  - Possible values
  "B" = Night Processing Phase.
  "C" = Preparatory Phase.
  "E" = Promoter Intervention Phase
  "F" = End-Day Consultation Phase.
  "O" = Opening Phase.
  "P" = Pre-opening / pre-closing phase.
  "R" = After-Market Trading Phase (session).
  "S" = Trading Phase (session).
  "I" = Impeded.
  "N" = Market Control (BOVESPA) Intervention Phase or for " Market Segment = "02 and 08 ", indicate "Trading Phase (session)".
  "Z" = Interrupted.

- **Number of collectors used by quotation group**

  Indicates the total number of collectors used by the message switcher to receive the messages issued by the Quotation Group.

  A quotation group that has more than a collector receives as many messages (16) as its number of collectors.

2.2.10 – Theoretical Opening Price (30)

Objective

This message informs Information Signal users of changes to parameters relating to opening trading for a stock:

Field name	Type	Compr

Theoretical Opening Price
        Format indicator
        Price
	
	X
	N
		
		01
		13

Theoretical quantity traded	N	12
Reserved	X	06
Direction of offer(s) not met at opening price	X	01
Quantity not taken up at opening price	N	12
Reserved	X	52

Variation in relation to previous day's closing price
        Format indicator
        Value of Variation
	
	X
	N
		
		01
		13

Reserved	X	06
Length of Text in Body of Message		117

Field name

- **Theoretical Opening Price**

  - **Definition/Purpose**
    Price of trade, if trade were to take place at this time.

  - **Possible values**
    Composed of the format indicator + price.

- **Direction of offers not taken up at opening price**

  - **Definition/Purpose**
    Identifies in the order book which end (buy or sell) is not being taken up at opening.

  - **Possible values:**
    "A" = Purchase.
    "V" = Sale.

- **Quantity not taken up at Opening Price**

  - **Definition/Purpose**
    Shows quantity not being attended at opening.

- **Variation in relation to the previous day's closing price**

  - **Definition/Purpose**
    Percentage variation between theoretical Opening Price and previous day's Closing Price.

2.2.11 – Summary of Opening (32)

Objective

This message will be sent in order to inform Information Signal users of the summary of trades taking place at the time of the first trade (opening of the group and later, if the stock had no quotation at the time of opening the group).

Field name	Type	Compr
First Price		
Format indicator	X	1
Price	N	13
Last Price		
Format indicator	X	1
Price	N	13
Best Price		
Format indicator	X	1
Price	N	13
Lowest Price		
Format indicator	X	1
Price	N	13
Type of Last Price	N	2
Accumulated amount	N	12
Reserved	X	6
Indication of Variation in relation to previous price	X	1
Variation in relation to previous day's closing price		
Format indicator	X	1
Variation	N	13
Reserved		26
Length of Text in Body of Message		117

Field name

- **First Price**

  - **Definition/Purpose**
    First price traded on the day.

  - **Possible values/Restrictions**
    Comprises price and its format.

- **Last Price**

- **Definition/Purpose**
  Last price traded so far.

- **Possible values/Restrictions**
  Comprises price and its format.

- **Best Price**

  - **Definition/Purpose**
    Best price traded so far.

  - **Possible values/Restrictions**
    Comprises price and its format.

- **Lowest price**

  - **Definition/Purpose**
    Lowest price traded so far.

  - **Possible values/Restrictions**
    Comprises price and its format.

- **Type of the last price**

  - **Definition/Purpose**
    Indicates type of event described in the message.

  - **Possible values/Restrictions**
    "04" = First trade.
    "07" = Trade.

- **Accumulated quantity**

  - **Definition/Purpose**
    Accumulated quantity of a stock traded at the session opening price.

- **Indicator of variation in relation to previous price**

- **Variation in relation to previous day's closing price**

  - **Definition/Purpose**
    Percentage variation between last opening price of the day and the previous day's closing price.

  NB If the trade is the first of the day (type of last price = 04), the fields "last", "best", "lowest" and "first price" are all equal to the price of the trade.

2.2.12 – Session Schedule by Quotation Group (39)

Objective

This message shows Information Signal users schedules for each group:

Field name	Type	Compr
Quotation Group Code	X	2
Pre-opening time	N	6
Opening time	N	6
Closing time	N	6
Reserved		78
Length of Text in Body of Message		98

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2.2.13 – Basic Registry of the Stock (53)

Field name	Type	Compr.
Name of stock	X	12
Specification	X	10
Reserved	X	20
Number of Shares	N	15
Reserved	X	139
Quotation Group of stock	X	2
Reserved	X	21
Standard lot	N	12
Reserved	X	5
Form of Quotation	N	1
Date of last trade	N	8
Reserved	X	89

Previous day's closing price
    Format indicator
    Price
	
	X
	N
		
		1
		13

Reserved	X	14

Option Exercise Price
    Format indicator
    Price
	
	X
	N
		
		1
		13

Reserved	X	73
ISIN code of stock	X	12
Reserved	X	84
Average Quantity / Last Trade Sessions	X	11

Frozen Parameters for Cross Trades
    Last Trade Price percentage
    Average Quantity of Shares percentage
    Total Number of Shares percentage
	
	N(4)VN(3)
	N(4)VN(3)
	N(4)VN(3)
		
		7
		7
		7

Frozen Parameters for non Cross Trades
    Last Trade Price percentage
    Average Quantity of Shares percentage
    Total Number of Shares percentage
	
	N(4)VN(3)
	N(4)VN(3)
	N(4)VN(3)
		
		7
		7
		7

Reserved	X	10

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2.2.13 - Basic Registry of the Stock (53) - continuation:

Field name	Type	Compr.
Indication of Option	X	1
Option expiration date	N	8
Option expiration time	N	6
Trading code of stock underlying option	X	12
Reserved	X	1
Market Segment	X	2
Reserved	X	19
IPDRV	X	1
Quantity multiplication coefficient	N	8
Reserved	X	73
Length of Text in Body of Message		739

Field name

- **Name of stock**

- **Specification**

 - **Definition/Purpose**
   Inform type of stock and its details for trading purposes (with or without rights to dividends).

- **Number of Shares**
   Inform the total number of shares by type of the stock code.

- **Stock's quotation group**

- **Form of Quotation**

 - **Definition/Purpose**
   Indicates how stock is quoted.

 - **Possible values**
   "1" = quotation for one share.
   "3" = quotation for one hundred share.
   "4" = quotation for one thousand shares.
   "5" = quotation for ten thousand shares.

- **Date of last trade**

- **Previous day's closing price**

- **Format indicator**

- **Price**

- **Standard lot**

  - **Definition/Purpose**
    The quantity traded must be a multiple of the standard lot for this stock in the cash market.

- **Stock's ISIN code**

- **Average Quantity / Last Trade Sessions**
  Inform the average quantity shares traded in the last trade sessions (see CVM Rule number 168).

- **Frozen Parameters for Cross Trades**
  Inform the frozen percentage over the last trade price, average quantity of shares and total number of shares defined by Market Surveillance for Cross Trades.

- **Frozen Parameters for non Cross Trades**
  Inform the frozen percentage over the last trade price, average quantity of shares and total number of shares defined by Market Surveillance for non Cross Trades.

- **Option exercise price/value of contract for secondary forward**

  - **Definition/Proposal**
    In the case of options, contains the series exercise price. If secondary forward contains value of contract.

- **Indication of Option**

  - **Possible values**
    "C" (call) = Purchase Option.
    "P" (put) = Sale Option.

- **Date of expiration of option/secondary forward**

- **Trading code of stock underlying option**

- **Market Segment**
  See Annex C.

- **IPDRV**

  - **Definition/Proposal**
    Indicator of previous day's closing price.

  - **Possible values**
    "T" = Theoretical price of EX share.
    "E" = Theoretical price of EX share when greater than WITH price.
    "P" = Theoretical price of EX share, resulting from dividends in different types of stocks/companies.
    "A" = Price arbitrated by BOVESPA.
    " " = Closing price for last session in which share traded.

- **Quantity Multiplication Coefficient**

- **Definition/Proposal**

All traded quantities must be multiplied by the multiplication coefficient. This will produce the real quantity traded.

Note: The coefficient is currently "1" in most cases.

2.2.14 – Retransmit the Order Book (S0)

Objective

This message tells Information Signal users that the Order Book (S3 messages) will be retransmitted:

Field name	Type	Compr
Indicator of beginning and end of retransmission	X	1
Reserved	X	7
Length of Text in Body of Message		8

Field name

- **Indicator of beginning and end of retransmission**

 - **Possible values**
  "D" = Beginning retransmission.
  "F" = End retransmission.

Important:

All orders currently in the order book for the asset in question must be excluded on receiving a message indicating start of retransmission of the order book.

2.2.15 – Updating Order Book (S3)

Objective

This message tells Information Signal users that the alteration is in one of the elements of the Order Book:

Field name	Type	Compr
Action type	X	1
Direction of Offer	X	1

Registered Offer Price
        Format indicator
        Price
	
	X
	X
		
		1
		13

Quantity shown	N	12
Reserved		12

Theoretical Opening Price
        Format indicator
        Price
	
	X
	X
		
		1
		13

Reserved		3

Offer Identification
        Broker Identification
        Offer Date
        Sequential number of Offer
	
	X
	N
	N
		
		8
		8
		6

Type of Price Registered	X	1
Order TimeStamp	N	20
Length of Text in Body of Message		100

Field name

- **Action Type**
  - **Definition/Purpose**
    Indicates the type of update made in the order book.

  - **Possible values**
    "C" = Creation of an Offer in the order book.
    "M" = Modification of an Offer in the order book.
    "R" = Retransmission of the order book.

- **Direction of Offer**

  - **Definition/Purpose**
    Indicates direction of Offer.

- **Possible values**
  "A" = Bid.
  "V" = Ask.

- **Price of Registered Offer**

  - **Definition/Purpose**
    Inform price of offers.

  - **Format indicator**
    See Annex A of the User Manual.

- **Price**
  - **Definition/Purpose**
    The price at which the offer is published in the "order book." The purpose of this field is to report offer prices.

  - **Possible values**
    Comprises price and format.

- **Quantity shown**

  - **Definition/Purpose**
    Total of stock that may be disclosed to the market in the order book. Allows MEGA BOLSA (BOVESPA's Electronic Trading System) to process an offer step by step, with the total quantity of offers disclosed gradually.

  - **Possible values**
    Less or equal to the remaining quantity to be executed.

- **Theoretical opening price**

- **Definition/Purpose**
  Report theoretical opening price during pre-opening.

  - **Format indicator**
    See Annex A of the User Manual.

  - **Price**

- **Theoretical opening price**
  Definition/Purpose
  The purpose of this field is to report offer prices.

  - **Possible values**
    Comprises price and its format.

- **Offer Identification**

- **Definition/Purpose**
  Identifies an offer for a certain stock in the order book.

- **Possible values**
  Comprises Broker identification + Offer Date + Offer Sequential Number. An offer's sequential number is created by MEGA BOLSA (BOVESPA's Electronic Trading System) for a stock.

- **Order TimeStamp**
  - **Definition / Purpose**
    Indicates order priority date time

  - **Possible values**
    YYYYMMDDHHMMSS999999

- **Type of price registered**

  - **Definition / Purpose**
    Indicates nature of offer limit specified by operator.

  - **Possible values**
    "**O**" = Offer at opening price
    "**L**" or "**S**" = Limit offer.
    "**M**" = Offer at market price.
    "**X**" = Offer at best price

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2.2.16 – Cancellations in Order Book (S4)

Objective

This message allows all Information Signal users to update their Order Book:

Field name	Type	Compr
Indication of type of cancellation	X	1
Offer Identification		
Broker Identification	X	8
Offer Date	N	8
Sequential number of Offer	N	6
Direction of Offer	X	1
Length of Text in Body of Message		24

Field name

- **Indication of type of cancellation**

  - **Definition/Purpose**
  Defines the type of cancellation to be made in the order book. Allows an offer to be canceled (all previous offers), taking into account the direction of the offer.

  - **Possible values**
  "1" = only the offer identified should be canceled.
  "2" = The identified offer and all similar better bids or asks should be canceled.
  "3" = All offers of a certain stock should be canceled.

- **Offer Identification**

  Comprises Broker's Identification + Offer Date + Sequential Number of Offer

- **Direction of Offer**

  - **Definition/Purpose**
  Identifies an offer for a certain stock in the order book.

  - **Possible values**
  "A" = Purchase.
  "V" = Sale.
  " " = Cancellation of bids and asks . Occurs when the cancellation type indication is "3."

2.2.17 – Index "Composition of Index" (A7)

Objective

This message shows Information Signal users the composition of the index. From **"1"** to **"n"** messages are issued at the start of the day to define the composition of each index:

Field name	Type	Compr
Description of stocks weighting in index (repeated thirty times)		
Stock Code	X	12
Stock Symbol	X	8
Contribution (%) of the Stock in the previous day's Reference Market Capitalization	N	3v4
Indicator of Last Message of Composition of Index	X	1
Number of stocks composing index	N	3
Previous day's closing index		
Format of Index	X	1
Index	N	7
Indicator of the Frequency of Calculation of the Index	X	1
Reserved	X	40
Length of Text in Body of Message		863

Field name

- **Description of stocks weighting in index (repeated thirty times)**

  - **Definition/Purpose**
  Describes weighting of stocks in index associated with message. This field formed by grouping data is found thirty times in message A7.

- **Stock code**

- **Stock Symbol**

- **Stock's weighting in Market Capitalization**

  - **Definition/Purpose**
  Indicates percentage weighting of the stock in the previous day's reference level for market capitalization.

- **Indicator for last index composition message**

  - **Definition/Purpose**
  Indicates whether this message is the last one describing the composition of said index or there are more messages in this respect.

- **Possible values**
  "0" = This message is not the last one for the above index.
  "1" = This message is the last one for this index.

- **Number of stocks composing the index**

- **Previous day's closing index**

- **Indicator of frequency of calculation of index**

- **Definition/Purpose**
Indicates the frequency of calculation of the index, identifying discontinuous indexes (calculation based on the first and last price), and continuous indexes calculated throughout the day of quotation at intervals predetermined by BOVESPA (e.g. 30 seconds).

- **Possible values**
  "C" = continuous type index
  "D" = discontinuous type index

NB. In the Functional Header, the stock code is the code of the index referred to.

2.2.18 – Index (B1)

Objective

Message B1 is issued at a specified frequency for each index. Depending on the type of index, it simultaneously reports its level, variations, and indicators of behavior of stocks in this portfolio:

Field name	Type	Compr
Type of Index	X	1
Last Index of the Day	N	9(5)V99
Higher Index in the Day	N	9(5)V99
Time of the day's highest index	N	6
Day's lowest index	N	9(5)V99
Time of the day's lowest index	N	6
Number of actively traded stocks in index	N	3
Percentage Capitalization of the Active Stocks in Index	N	9(3)V99
Reserved		6
Indicator Direction of Variation of Index (Type of Index 1,2,5)	X	1
Percentage Variation of Index (Type of Index 1,2,5)	N	9(3)V99
Reserved		6
Indicator direction of variation of index in relation to the previous year's last (type of index 1,2,5)	X	1
Percentage variation of index in relation to previous year's last (Type of Index 1,2,5)	N	9(3)V99
Reserved	X	16
Number of stocks falling in index portfolio	N	3
Number of stocks rising in index portfolio	N	3
Number of Stocks with no variation in Index portfolio	N	3
Number of stocks with no quotation in index portfolio	N	3
Number of stocks reserved in index portfolio	N	3
Number of stocks suspended in index portfolio	N	3
Total number of stocks in index portfolio	N	3

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Continuation:

Field name	Type	Compr
Reserved		19
Indicator of presence of supplementary data on index portfolio	N	1
Reserved		28
Length of Text in Body of Message		151

Field name

- **Type of Index**

  - **Definition/Purpose**
  Indicates the type of index associated with message.

  - **Possible values**
    "1" = First index announced.
    "2" = Index.
    "5" = Reference index.
    "6" = Average index.
    "7" = Settlement index.
    "8" = Ignore**.**

- **Last Index of the Day**

- **Highest Index of the Day**

- **Time of Highest Index of the Day**

- **Lowest Index of the Day**

- **Time of Lowest Index of the Day**

- **Number of Actively Traded Stocks in the Index**

  - **Definition/Purpose**
  Indicates the number of stocks in the index that were traded and involved in calculation of the index.

- **Percentage Capitalization of Actively Traded Stocks in Index**

  - **Definition/Purpose**
  Indicates percentage weighting in the index relating to stocks that were traded and included in calculation of the index.

- **Indicator direction of variation of index (type of index = 1, 2, 5)**

  - **Definition/Purpose**
  Indicates direction of variation registered in relation to the previous day's reference index.

- **Percentage Variation of Index (type of index = 1,2,5)**

- **Definition/Purpose**
Indicates the percentage variation registered in relation to the previous day's reference index.

- **Indicator of direction of variation of index in relation to the previous year's last (type of index = 1,2,5)**

  - **Definition/Purpose**
  Indicates direction of variation registered in relation to the previous year's last.

- **Percentage variation of index in relation to previous year's last (type of index = 1,2,5)**

  - **Definition/Purpose**
  Indicates percentage variation registered in relation to the previous year's last.

- **Number of stocks falling in the index portfolio**

- **Number of stocks rising in index portfolio**

- **Number of stocks with no variation in index portfolio**

- **Number of stocks with no quotation in index portfolio**

- **Number of stocks reserved in index portfolio**

- **Number of stocks suspended in index portfolio**

- **Total number of stocks in index portfolio**

- **Indicator of presence of supplementary data on index portfolio**

  - **Definition/Purpose**
  States whether the previous indicators (based on number of stocks falling in index portfolio) are significant.
  "0" = No.
  "1" = Yes.

2.2.19 – Securities Loans - BTC (Z1)

Field name	Type	Compr

Type of Operation:
    I = Inclusion
    A= Alteration
    E= Exclusion
    R = Retransmission (position at start of day)
	X	1

Type of offer:
    1 = Lender
    2 = Borrower
	N	1

Offer number	X	9
Stock's trading code	X	12
Company	X	30
Quantity	N	18
Fee (five decimal places)	N	8
Maximum period (YYYYMMDD)	N	8
Length of Text in Body of Message		87

The CBLC - BTC service provides securities for loans available to investors depositing collateral. CBLC acts as counterpart and guarantees operations.

Access to the service is through an electronic system, and the borrower pays a fee to the lender plus the CBLC's charge. The fee is freely agreed between the parties. All proceeds declared by the issuer of the security belong to the original proprietor.

For more conceptual information, access the website: http://www.cblc.com.br .

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2.2.20 – News (Z3)

Objective

Dissemination of news. Each news item may occupy one or more pages, which comprise a number of lines. It is assumed that the first line of the news item is its headline.

Field name	Type	Compr
Agency Identification	N	3
Priority	N	1
News item number	N	4
News schedule	N	6
Number of news pages	N	2
Page number	N	2
News item text	X	Variable with max. = 800
Length of Text in Body of Message		Variable

Field name

- **Agency Identification**

  - **Definition/Purpose**
    Indicates agency producing news item.

  - **Possible values.**
    "11" = The Over-the-Counter news agency.
    "13" = Electronic Purchase Exchange.
    "14" = CBLC News Agency.
    "15" = BOVESPA - Index Agency.
    "16" = BOVESPA - Institutional Agency.
    "17' = BOVESPA - Operations Agency.
    "18' = BOVESPA - Companies Agency.

- **Priority**

  - **Definition/Purpose**
    Indicates level of importance of news.

  - **Possible values**
    "1" = most important.
    "2" = normal.
    "3" = less important.

- **News item number**

  - **Definition/Purpose**
    Sequential number of news by agency, on the day.

- **News schedule**

- **Number of news pages**

  - **Definition/Purpose**
    Defines the number of pages that will compose news.

- **Page number**

  - **Definition/Purpose**
    Defines number of news page.

  - **Possible values**
    From **"1"** to the number of news pages.

- **News item text**

  - **Definition/Purpose**
    The text of the news item comprises lines of at most 80 characters. The line break will be CR LF (#$0D, #$0A). The first line of each news item is its headline.

2.2.21 – Fixed Income - BOVESPA FIX (Z5)

Objective

Distribution of data from BOVESPA FIX - trading environment for BOVESPA's Private Income Securities.

Field name	Type	Compr
BOVESPA FIX message	X	Variable
Length of Text in Body of Message		Variable

Field name

- **BOVESPA FIX message**

  - **Definition/Purpose**
    See description in Annex E - Fixed Income - Description of Messages.

3 – ANNEXES

3.1 – ANNEX A - FIELD CODES

3.1.1 – Binary type (b)

Binary code (b) with the following convention:
- integer with or without signal.
- 1, 2 or 4 bytes.

3.1.2 – Numerical type (n)

ASCII coding for a whole with the following convention:
- right adjusted.
- may be completed with 0.

Example:

- coding for 257, numerical, using 4 bytes.

0	2	5	7

- code for -12, numerical, using 8 bytes.

-	0	0	0	0	0	1	2

- COBOL equivalent : PIC 9(n) or PIC S9(n)

3.1.3 – Character Type (x)

alphanumeric
COBOL equivalent: PIC X(n)

3.1.4 – Dates

All dates are presented as 8 numerical characters in format (YYYYMMDD).

3.1.5 – Times

All times are shown as 6 numerical characters in the format (HHMMSS).

3.1.6 – Field format

Indicates the number of decimal places of the amount and whether positive or negative.

Possible values
" " – no significance.
"0" – positive value, no decimal place
"1" – positive value, 1 decimal place.
"2" – positive value, with 2 decimal places.
"3" – positive value, with 3 decimal places.
"4" – positive value, with 4 decimal places.
"5" – positive value, with 5 decimal places.
"6" – positive value, with 6 decimal places.
"7" – positive value, with 7 decimal places.
"8" – positive value, with 8 decimal places.

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"9" – positive value, with 9 decimal places.

"A" - negative value, no decimal place.

"B" - negative value, 1 decimal place.

"C" - negative value, with 2 decimal places.

"D" - negative value, with 3 decimal places.

"E" - negative value, with 4 decimal places.

"F" - negative value, with 5 decimal places.

"G" - negative value, with 6 decimal places.

"H" - negative value, with 7 decimal places.

"I" - negative value, with 8 decimal places.

"J" - negative value, with 9 decimal places.

3.2 – ANNEX B - QUOTATION GROUPS

The Quotation Groups data shown in the "Functional Header" of messages - item 2.1 in the Message Description Manual and in messages 16, 39, and 53 are dynamic and there may be alterations from one day to another, so we are not able to inform Information Signal users in advance of all and any alteration.

The data on Quotation Groups are contents of messages and alterations in these contents do not lead to changes in the formats of messages and fields. Therefore no adjustments in Information Signal users' systems are necessary.

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3.3 – ANNEX C - MARKET SEGMENT

01	Cash
02	Forward
03	Fractional
04	Options
05	Auction
06	Auction - Non Quoted
07	Reserved
08	Forward in Points
09	Option Exercise
90	Indexes

3.4 – ANNEX D - TECHNICAL STRUCTURE FOR INFORMATION SIGNAL USERS RECEIVING DATA

3.4.1 – General Description

Data is distributed through connection to RCCF(Financial Community Communication Network) in Brazil..

This requires Information Signal users to have a server (to receive the Signal).

All Information Signal users will receive standardized data in the same conditions, therefore the speed of the VPN (Virtual Private Network) must not be altered, nor can communication protocols other than those defined in this document be used.

3.4.2 – Equipment

The equipment required for this connection must be acquired by Information Signal users. A description of equipment recommended by BOVESPA follows:

Hardware/Software:

- 1 PC to function as signal receiver with the following minimum configuration:

Minimum:

- Pentium III 900 MHz
- 512 MB RAM memory
- OS Windows 2000 / XP

Recommended:

- Pentium IV 2.0 GHz
- 512 MB de RAM memory
- OS Windows XP

- ProxyDiff receiver software (supplied by BOVESPA).
- OCX Component (supplied by BOVESPA).
- Programs and treatment of messages developed by Information Signal user in accordance with specifications in this Manual.

3.4.3 – Functioning

Information Signal users must have a LAN and server to connect to a BOVESPA central server. The local network will be under the responsibility of the Information Signal user.

The IP address of Information Signal user networks for receiving data will be defined by BOVESPA and the description and format of messages are described in this Manual.

The basic module for providing Information Signal data is formed by server session and an access port in BOVESPA.

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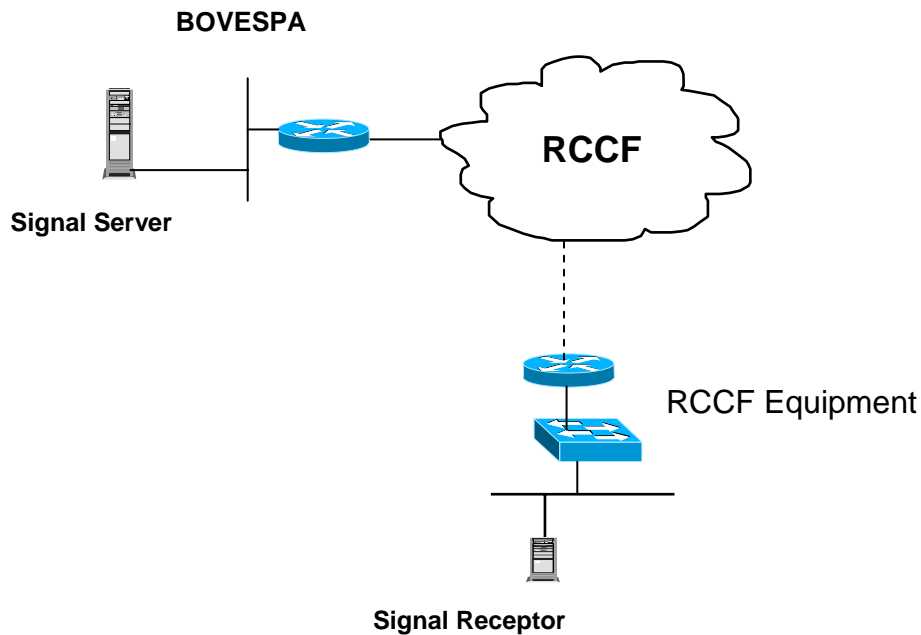
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3.4.4 – Security

IPSEC configuration will be implemented in such a way that Information Signal Users only access a group of servers and a specific PORT TCP/IP.

This configuration will be applied to BOVESPA routers.

3.4.5 – Addressing

IP addressing for the network and hosts will be provided by BOVESPA and should be followed in its entirety.

The IP address is based on the A class and the sub-network mask has 14 bits (Network 125.0.0.0, subnet mask 255.255.252.0).

Other addresses and configurations will be made available on the Technical Form.

3.4.6 – Management

BOVESPA will manage the network using the response time and RCCF switch availability; the remainder of the network will be under control and management responsibility of Information Signal users themselves.

3.4.7 – Contingency

The contingency system (optional for Information Signal users) may be provided through the following form:

 Information Signal user server contingency

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RCCF

RCCF Equipment

Signal Receptor **Signal Receptor Backup**
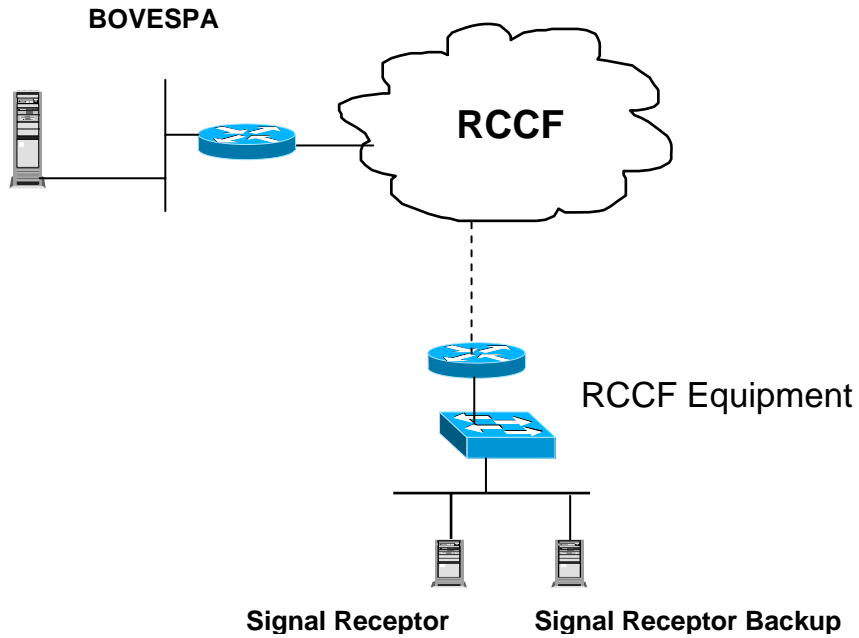
If Information Signal users need to receive data on 2 lines an extra set (router port and line signal) is required. In accordance with item 3.4.2 - Equipment.

3.5 – ANNEX E - FIXED INCOME - DESCRIPTION OF MESSAGES

Format for messages distributed in Fixed Income markets is as described below.

3.5.1 – Message structure

STX	Header	Trailer	ETX

The header (control block) is common to all registrations and contains control information.

The trailer (data block) takes on format and size depending on indication of the registration code field.

3.5.1.1 – HEADER

Field name	Type	Size
Size	9	(04)
User		
Market	X	(01)
Agent	9	(03)
Operator	X	(02)
Date (YYMMDD)	9	(06)
Time (HHMMSS)	9	(06)
Sequence	9	(05)
Registration code	9	(04)

Description of fields:

Size	Quantity of characters sent in registration
User	Proprietor of Information (Agent and Operator zeroed)
Date	Date of Registration
Time	Time of Registration
Sequence	Registration Sequence Number
Registration codes	Specifies correspondence between information contained in the data block and current transaction. 2101 - Updating securities; 2102 - Updating securities - Variable Portion; 2201 - Updating Agents; 8104 - Official closing; 9110 - Updating for each operation; 9120 - Reference Price; 9130 - Total updating each minute; 9140 - Updating offers; 9141 - 5 Best Limits.

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3.5.2 – Registration codes

3.5.2.1 – (2101) Updates for securities

	Field name	Type	Size
1	Security code	X	(05)
2	Movement code	9	(01)
3	Description.	X	(30)
4	Has coupon	9	(01)
5	First Coupon	9	(03)
6	Last Coupon	9	(03)
7	Currency	X	(01)
8	Residual value	9	(03)V9(06)
9	Indicator type	X	(01)
10	Brief description	X	(10)
11	Stock's trading status	X	(01)
12	Date suspended (YYYYMMDD)	9	(08)
13	Time suspended (HHMMSS)	9	(06)
14	Divisibility	9	(07)
15	Current coupon	X	(03)
16	Qualified operation - occurs 20 times	X	(01)
17	Date Validity Interest (YYYYMMDD)	9	(08)
18	Date End Interest (YYYYMMDD)	9	(08)
19	Interest rate today	9	(02)V9(6)
20	Date Validity Previous Interest (YYYYMMDD)	9	(08)
21	Date End Previous Interest (YYYYMMDD)	9	(08)
22	Previous interest rate	9	(02)V9(6)
23	Trading Ambit - Occurs 10 Times	X	(01)
24	Nominal load	X	(01)
25	Real Days	X	(01)
26	ISIN Code	X	(12)
27	Percentage on Price	9	(03)V9(02)
28	Whom affected by price	X	(01)
29	Percentage of available security paid	9	(03)V9(02)
30	Whose payment is affected / secured	X	(01)
31	Standard lot	9	(08)
32	Maximum lot Non-divisible	9	(08)
33	Integer / decimal indicator	X	(01)
34	Decimal Prices	9	(08)
35	Fee Code	X	(03)
36	IPC Indicator	X	(03)
37	Additional fee signal	X	(01)

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3.5.2.1 - (2101) Updates for securities - continuation

	Field name	**Type**	**Size**
38	Additional fee	9	(04)V9(06)
39	Issue Date (YYYYMMDD)	9	(08)
40	Expiration Date (YYYYMMDD)	9	(08)
41	Date Last Interest Paid (YYYYMMDD)	9	(08)
42	Annual base	9	(03)
43	Divisor Price	9	(08)
44	Formula	X	(02)
45	Consecutive days gone by	X	(03)
46	Indicator settlement date	X	(01)
47	Type of days	X	(01)
48	Direction of Auction	X	(01)
49	Expiration Indicator	X	(01)
50	Next Expiration (MMDD)	9	(04)
51	Settlers	X	(20)
52	Proprietor of Information	X	(02)
53	BCB Index	X	(07)
54	Reserved	X	(143)

Description of fields:

Movement code	1 = Exclusion 2 = Inclusion 3 = Alteration
Coupon	0 = Not applicable 1 = Has
Indicator Type (defined by market)	1 = LTN 2 = LFT 3 = NBC-E 4 = Repo sales
Trading status	0 = normal 1 = Trading suspended 2 = Trading in local currency suspended 3 = Trading in dollars suspended 4 = Trading suspended for 30 Minutes 5 = Trading suspended until next business day 6 = Previous day's trading suspended
Issue date	Date of Issue of the Instrument
Date of Expiration	Date of Expiration of the Instrument
Date last interest paid	Last date interest on instrument paid.

Annual base	Annual base divisor (e.g. 360, 365).
Price divisor	Quantity of instrument that price represents.
Settlement date indicator	Space = not applicable H = Date of process M = Date of process + 1 business day P = Date of process + 2 business days
Expiration Indicator	A= Annual S = Half-yearly C = Four-monthly T = Quarterly B = Bimonthly M = Monthly
Next Expiration	Date of next amortization.
BCB Index	Instrument code - Central Bank

3.5.2.2 – (2102) Updates for securities (variable portion)

Field name	Type	Size
Movement code	X	(01)
Trading code	X	(01)
Security code	X	(05)
Currency	X	(01)
Variable	X	(07)
Settlement Date (YYYYMMDD)	9	(08)
Proprietor of Information	X	(02)

Description of fields:

Movement code	1 = Exclusion 2 = Inclusion 3 = Alteration
Trading code	Defined by Market
Security code	Type Traded
Currency	Trading currency
Variable	Free (may be a fee)
Issue date	Expiration date of instrument.
Proprietor of Information	29 = BOVESPA

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3.5.2.3 – (2201) Updates for Agents

Field name	Type	Size
Market	X	(01)
Agent	9	(03)
Operator	X	(02)
Movement code	9	(01)
Name	X	(10)
Business name	X	(30)
Address	X	(30)
Locality	X	(15)
Postal code	9	(04)
Person responsible	X	(30)
Telephone	X	(20)
Fax	X	(10)
Type of Agent	X	(10)
Trading status	X	(01)
Reserved	X	(08)
Proprietor of Information	X	(02)
Reserved	X	(32)

Description of fields:

Market	Market to which Agent belongs
Agent	Number Identifying Market Agent
Operator	00 for Agent's Main Registration
Movement code	1 = Exclusion 2 = Inclusion 3 = Alteration
Name	Brief name of Agent
Business name	Name of Agent
Trading status	0 = normal 1 = blocked 2 = suspended
Proprietor of Information	29 = BOVESPA

3.5.2.4 – (8104) Official Closing

Field name	Type	Size
Market	X	(01)
Date	9	(08)
Instrument code	X	(15)
Simple description	X	(10)
Description	X	(30)
Closing Price	S9	(10)V9(08)
Settlement Condition	X	(01)
Closing price date	X	(08)
Bid Price	S9	(10)V9(08)
Quantity of bid	9	(14)V9(04)
Date of bid	X	(08)
Time of bid	X	(06)
Ask price	S9	(10)V9(08)
Quantity ask	9	(14)V9(04)
Date ask	X	(08)
Time ask	X	(06)
Price last transaction	S9	(10)V9(08)
Quantity last transaction	9	(14)V9(04)
Date last transaction	X	(08)
Previous closing	S9	(10)V9(08)
Opening price	S9	(10)V9(08)
Minimum price	S9	(10)V9(08)
Average price	S9	(10)V9(08)
Maximum price	S9	(10)V9(08)
Accumulated quantity	9	(14)V9(04)
Volume Operated	9	(12)V9(02)
Number Operations	9	(05)
Proprietor of Information	X	(02)
Reserved	X	(18)

Description of fields:

User (in header)	Is proprietor of information (for the market - zeros)
Date	Date of registration
Instrument code	See description on page 15.
Simple description	Brief description of instrument

Description	Full description of instrument
Closing Price	Closing price traded on the day
Settlement Condition	C = Buyer closing (set by active offers) V = Seller closing (set by active offers) T = Transaction closing (marked by an operation) N = Nominal Closing (historical price - without offers or operations)
Closing price date	Dates of setting closing price
Bid price	Price of best bid when set in buyer settlement condition
Quantity of bid	Quantity of best bid when set with buyer settlement condition
Bid date	Date of best bid when set with buyer settlement condition
Time of bid	Time of best bid when set with buyer settlement condition
Asking price	Best asking price when set with seller settlement condition
Quantity of ask	Quantity of best ask when set with seller settlement condition
Date of ask	Date of best ask when set with seller settlement condition
Time of ask	Time of best ask when set with seller settlement condition
Price last transaction	Price of last closing made
Quantity of last transaction	Quantity of the last closing made
Date last transaction	Date last closing made
Previous closing	Last closing price
Opening price	Price of first closing of the day
Minimum price	Minimum price traded on the day for the instrument
Average price	Weighted average price traded on the day for the instrument
Maximum price	Maximum price traded in the day for the instrument
Accumulated quantity	Sum of quantities traded on the day for the instrument
Volume traded	Sum of volume traded on the day for the instrument
Number of trades	Quantity of closings made on the day for the instrument

3.5.2.5 – (9110) Update for Each Operation

Field name	Type	Size
Instrument code	X	(15)
Code operation origin	9	(04)
Type of operation origin	9	(01)
Type of operation destination	9	(01)
Time	9	(06)
Total quantity	9	(14)V9(04).
Volume traded	9	(12)V9(06).
Average price	S9	(10)V9(08).
Price Previous Closing	S9	(10)V9(08).
Last Price	S9	(10)V9(08).
Fluctuation signal	X	(01)
Fluctuation with previous closing	9	(04)V99
Minimum	9	(10)V9(08)
Maximum	9	(10)V9(08)
Date	9	(06)
Time	9	(06)
Sequence	9	(05)
Instrument code	X	(15)
Origin Agent Code	X	(06)
Destination Agent Code	X	(06)
Quantity of Operation	9	(14)V9(04).
Price	S9	(10)V9(08)
Reference price	S9	(10)V9(08)
Top Base	9	(3)V99
Fluctuation	9	(3)V99
Type Operation	9	(02)
Price Yesterday	S9	(10)V9(08)
Code of round	X	(4)
Code operation origin	9	(04)
Interest	9	(16)V9(02)
Residual value	9	(3)V(02)
Operation fee	S9	(10)V9(08)
Origin of Operation	X	(01)
Gain	9	(16)V9(02)
Gain in dollars	9	(16)V9(02)
Acronym	X	(30)
Bid number	X	(05)

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3.5.2.5 - (9110) Update for each operation - continuation

Field name	Type	Size
Ask number	X	(05)
Proprietor of Information	X	(02)
Reserved	X	(321)

Description of fields:

Instrument code	**See description on page 15.**
Code operation origin	0105 = Sale based on offers 0205 = Purchase based on offers 0301 = Sale based on trading 0401 = Purchase based on trading
Type of operation origin	1 = On behalf of third parties 5 = Own portfolio
Type of destination operation	0 = Third parties 1 = On behalf of third parties 3 = Agents from other market 5 = Own portfolio
Time	Time of registration
Total quantity	Quantity traded on the day
Volume traded	Volume traded in the day
Average price	Average traded price of instrument
Previous closing price	Previous day's closing price
Last price	Last traded price
Fluctuation signal	Positive or negative value of difference in relation to previous closing
Fluctuation	Percentage variation between last price and previous closing price
Minimum price	Minimum price traded on the day for instrument
Maximum price	Maximum price traded on the day for instrument
Date	Date of operation
Time	Time of operation
Sequence	Sequence signed for operation
Instrument code	Traded instrument

Origin Agent	Spaces
Destination Agent	Spaces
Quantity of Operation	Quantity traded in this operation
Price	Price of operation
Reference price	Exchange reference price
Top Base	Maximum percentage variation of prices possible on day
Fluctuation	Maximum percentage price variation in relation to reference price, before going to auction.
Type of Operation	Joined fields "Type of origin operation " and "Type of destination operation"
Price yesterday	Last price previous business day
Code of origin operation	0105 = for sale based on offer 0205 = for purchase based on offer 0301 = for sale based on trading 0301 = for sale based on trading 0302 = for exclusion of sale operation 0401 = for purchase based on trading 0402 = for exclusion of purchase operation
Interest	Volume of interest gained by settlement date (Argentina only)
Residual value	Percentage yet to be amortized
Interest	Value of interest entered in offers (Argentina only)
Origin of Operation	D = Direct order M = Matching O= Taking offer P = Auction T = Trading

3.5.2.6 – (9120) Reference Price

Field name	**Type**	**Size**
Type of record	X	(01)
Security Code	X	(05)
Coupon number	X	(03)
Currency	X	(01)
Reference Price	S9	(10)V9(08)
Term of Operation	9	(03)
Date	9	(06)
Hour	9	(06)

Type of Negotiation	X	(01)
Reserved	X	(22)

Description of fields:

Type of Record	A = Inclusion
	M = Modification
	B = Exclusion
Coupon number	Is the number of the coupon (identification)
Currency	Currency of Trade
Term of Operation	Is the number of days in which settlement is carried out
Date	Date of Registration
Hour	Hour of Registration
Type of Negotiation	Defined by market

3.5.2.7 – (9130) Totals - Update every minute

Field name	Type	Size
Type indicator	X	(01)
Movement in reais	9	(12)V9(06)
Movement in dollars	9	(12)V9(06)
Proprietor of Information	X	(02)

3.5.2.8 – (9140) Update of Offers

Field name	Type	Size
Code of origin operation	9	(04)
Code of round	X	(04)
Code of attached round	X	(04)
Order sequence number	9	(05)
Argument	X	(30)
Linked argument	X	(30)
Expiration time	9	(06)
Residual quantity	9	(14)V9(04)
Nominal price	S9	(12)V9(06)
Residual value	9	(03)V9(02)
Instrument code	X	(15)
Information - price or fee	X	(01)

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Order of Offers	X	(01)
Proprietor of Information	X	(02)

Description of fields:

Code of origin operation	0101 = inclusion of ask 0102 = exclusion of ask 0103 = alteration of ask 0201 = inclusion of bid 0202 = exclusion of bid 0203 = alteration of bid
Code of round	Name of round in which offer is made
Code of attached round	Name of attached round in which same offer is shown
Sequence number	The number assigned to the transaction
Argument	Identification of the first column of the round (used generically to identify the instrument to be traded)
Attached argument	Identification of first column of the attached round
Expiration time	Time offer expires
Residual amount	Quantity entered in the offer modified by the residual value of the instrument
Nominal price	Price entered in the offer modified by residual value of instrument
Residual value	Percentage of nominal value yet to be amortized
Instrument code	See following description (*).
Information - Price or Fee	1 = States price 2 = States fee
Order of Offers	1 = best purchase is the highest value, best sale is the lowest value 2 = Best purchase is the lowest value; best sale is the highest value.

3.5.2.9 - (9141) 5 Best-Limits

Field name	Type	Size
Market	X	(01)
Pit Code	X	(04)
Instrument Code	X	(15)
Proprietor of Information	X	(02)
Instrument Code Description	X	(30)
Sell (occurs 5 times – from 1ª to 5ª best)		
Best Sell Price	S9	(10)V9(08)
Number of Offers at the best sell price	9	(03)
Best Sell Price Quantity	9	(14)V9(04)

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Buy (occurs 5 times – from 1ª to 5ª best)		
Best Buy Price	S9	(10)V9(08)
Number of Offers at the best buy price	9	(03)
Best Buy Price Quantity	9	(14)V9(04)

Description of fields:

Pit Code	Is the name of the pit where the order is found
Instrument Code	See following description (*)
Instrument Code Description	Is the identification of the first column of the pit (used generically to identify the instrument to be traded)
Number of Offers at the best sell price	Number of Offers at the best sell side
Best Sell Price Quantity	Quantity of the best limit at the sell side
Number of Offers at the best Buy price	Number of Offers at the best buy side
Best Buy Price Quantity	Quantity of the best limit at the buy side

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(*) - DESCRIPTION OF INSTRUMENT CODE

Instrument Code contains 15 positions

Field name	Type	Size
Trading Code	X	(01)
Code Type	X	(05)
Coupon	X	(01)
Coupon Number	9	(03)
Period of the Operation	9	(03)
Currency	X	(01)
Class of Instrument	X	(01)

Description of Field:

Stock Trading Code	Defined by the Market
Type Code	This refers to the type traded
Coupon	C = trading coupon only = trading full caution
Coupon Number	Number of coupon adhered to caution
Period of Operation	Number of days in which operation takes place
Currency	Trading currency
Class	Defined by the Market