Technological Systems & Services Directorate
Trading Systems Development Department

***A**thens **E**xchange S.A.*

OASIS - IDS
Market Data Feed Specification

Version 4.0.4

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This material comprises a part of the technical documentation of the **Feed Information Center (FIC) and its underlying feed dissemination services** and is disclosed by ATHEX only to our customers Data Vendors, members, Independent Software Vendors (ISV) who intent to receive the market data feed generated by the ATHEX-CSE common platform (spot and derivatives markets).

Revision History		
Issue	**Date**	**Description**
1.3.6	20/09/2006	Original Document (used as a reference)
2.0.0	1/12/2006	Includes extensive modifications/additions to the Original Document. If the reader is familiar ONLY with the version 1.3.6 or the earlier ones then he/she should read the entire document. Indicatively, the most important modifications are the following: a) The new spec is compliant with the CESR recommendations a. DATE and TIME fields where formatted according to ISO standard 8601 b. Introducing (in the header) the Market Identification Code (MIC) defined by ISO 10383 b) **Introduced:** (in the header) the Subcategory field which identifies the financial product (e.g. bond, warrant, index, etc.) and imposes a second level of message categorization c) **Introduced:** the idea of variable-message-length categories. Namely the categories **B** (Quote), **F** (Index Baseline), **H** (News) d) **Defined:** 4 new message categories. Namely the categories **M** (Projected-Auction/Auction-Open Price), **N** (High/Low Limit Modification), **O** (Security State), **P** (Market Status) e) **Modified:** the semantics and format of 3 message categories. Namely the categories **D** (from Statistics became Security Record), **H** (from OTC Sale became News), **L** (from Projected-Open/Pre-Open/Closing Price became Closing Price) f) **Renamed**: 2 message categories. Namely the categories **A** (the Last Sale was changed to Trade), **I** (the Cancelled Sale was changed to Cancelled Trade) g) **Enriched**: the payload of message categories **A**, **B**, **F**, **G** and **I** h) **Shorten** the payload of message category **E** i) **Deleted:** the message category **J** (Securities Modifications) and the control messages **KB** (Market Open), **KD** (Trading Halt/Resume) and **KG** (Market Close) Finally the specification was renamed from “ATHEX MARKET DATA FEED SPECIFICATION” (version 1.3.6 and its predecessors) to “OASIS MARKET DATA FEED SPECIFICATION” (version 2.0.0 and its successors).
2.0.1	24/1/2007	**Addition:** The meaning of the space character as a packet’s subcategory (paragraph 3.3.3 Message Subcategory and Table 6-3, Message Subcategories) **Addition:** The four-spaces string in the Venue ID table (Table 6-15, Venue IDs (MICs)) **Addition:** Complementary information pertinent to the Stop and SPACE phase IDs and the Resume status (paragraphs 6.11 Phase ID and 6.12 Instrument Status) **Modification:** The explanation of the last three characters of the timestamp field was changed from “hundredths of second” to “milliseconds” and one of the Phase ID values was changed to ‘S’ (Stop) form ‘J’ (Projected Auction) .(paragraph 3.3.6 Message Time Stamp, Table 6-7, Phase IDs)

		Correction: There are **five** Category K subsections and not six and the size of the Composition Information group is **34** bytes long and not 35 (paragraphs 4.2 Category K - Control Message Formats, 4.4 Category F – Index Record Message) **Rewriting:** The wording of the description for the fields "Outstanding Shares" and in paragraphs 4.3 Category D – Instrument Record Message, 4.5 Category E – Security Baseline Message, 4.4 Category F – Index Record Message. **Correction:** The "Projected Auction" character was replaced by the "Stop" character and the SPACE character was added as the null Phase ID (paragraph 4.14 Category O – Instrument State Message and Table 6-7, Phase IDs)
2.0.2	21/11/2007	**Addition:** Complementary information pertinent to Category M messages (paragraph 4.12 Category M – Projected-Auction / Auction-Open / Projected Close Price Message) **Addition:** The meaning of the 'T' status for Auction-type markets (paragraph 6.10 Market Status) **Rewriting:** The wording of the description of the 'Reference ISIN Code' field in Category 'E' (paragraph 4.5.1 All Tradable Message Subcategories Except 'B' (Category 'E')) **Correction:** The fields Company and Security Codes in Category 'E' were 'Typed' as Numeric Characters (paragraph 4.5.1 All Tradable Message Subcategories Except 'B' (Category 'E')) **Clarification:** Which condition triggers a Line Verification Control message (paragraph 4.2.4 Type "T" Line Verification Control Message (Category 'K')) **Addition:** The ENAX string in the Venue ID table and the meaning of the four-spaces string (Table 6-15, Venue IDs (MICs)) **Addition:** The three new Market IDs (T, F, G) in the Market IDs table (Table 6-4, Market IDs) **Addition:** The symbol 'R' as an new market status in Category P messages (paragraph 6.10 Market Status)
3.0.0	15/09/2008	**Definition:** 4 new messages. Namely Category Q – Order Message, Category R – Cancelled Order Message, Category S – Exchange Notifications Message and Category T – OTC Message **Clarification:** Which condition triggers a Line Verification Control message (paragraph 4.2.4 Type "T" Line Verification Control Message (Category 'K')) **Modification:** The size of all PRICE fields as well as all quantity-related (e.g. volume, outstanding shares etc.) fields was increased. (see Table 2-1, Table 4-9, Table 4-13, Table 4-14, Table 4-5, Table 4-7, Table 4-8,Table 4-19, Table 4-20, Table 4-15) **Addition:** New fields at message categories A, B, E, F and I

		Modification: Replacement of the Trade Type field with the Board ID field at the Category A – Trade Message **Modification:** Omission of the Text, RTF and HTML content formats from the Category H – News Message and renaming this category into Financial News (see Table 6-1) **Addition:** The HOTC string in the Venue ID table (Table 6-15, Venue IDs (MICs)) **Addition:** An example of the parsing of a Category Q Message
3.0.1	3/4/2009	**Clarification:** The possible values put in the order number and date fields (for Buy and Sell), pertinent to Pre-Agreed trades (see paragraph 4.6) **Removal:** The phrase "(currently the IDS can support ONLY **one** Quote level for Bonds and up to **five** Quote levels for all other tradable securities)", from the Category B – Quote Message paragraph (see paragraph 4.10) **Clarification:** The possible values put in the Price field of Category Q – Order Message (see text below Table 4-11) **Addition:** The fields Order Release Date, Order Release Time and Last Order Update Date in the Category Q – Order Message (see paragraph 4.8) **Clarification:** The dissemination of the Category G – Instrument Summary Message (see paragraph 4.16) **Addition:** The flag Actual Projected Close (2) in the Category M – Projected-Auction / Auction-Open / Projected Close Price Message and other information in general (see paragraph 4.12) **Note:** The calculation of the volumes in Bond-related data feed messages (see paragraph 2.4.3) **Addition:** Two new fields (i.e. OTC Type and OTC Price Type) and their respective tables (paragraph : 4.20 Category T – OTC Message and Table 6-16, Table 6-17)
3.0.2	16/4/2009	**Addition:** The XECM string in the Venue ID table (Table 6-15, Venue IDs (MICs)) **Addition:** The two new Market IDs (I, J) in the Market IDs table (Table 6-4, Market IDs)
3.0.3	16/2/2010	**Clarification:** The dissemination of a Projected Close Price Message (see paragraph 4.12 Category M – Projected-Auction / Auction-Open / Projected Close Price Message) **Addition:** The new Market ID (L) in the Market IDs table (Table 6-4, Market IDs) **Clarification:** The possible values of the **OTC Price** field (paragraph : 4.20 Category T – OTC Message)
3.0.4	31/5/2011	**Modification:** The number of decimal digits of the PRICE type fields (see paragraph 2.3) **Addition:** The 'R' character in the Subcategory table (Table 6-3)

		Addition: The EUAX string in the Venue ID table (Table 6-15, Venue IDs (MICs)) **Addition:** The new Market ID (R) in the Market IDs table (Table 6-4, Market IDs) **Addition:** The Ceil, Floor Price fields in Category D – Instrument Record Message, Category N – High/Low Limit Modification Message. (see paragraphs 4.3, 4.13)
3.0.5	2/9/2011	**Modification**: The valid market ID table (see paragraph **6.8**)
4.0.0	2/4/2013	**Note:** The communication Interface as well as the Protocol specifications of the IDS subsystem is now common for the instruments of all Greek & Cyprus markets (Stock, Fixed-income and Derivatives) **Renaming:** Security record message is renamed to Instrument record, Index baseline message to Index record, Security State message to Instrument state message, Security Summary message to Instrument Summary message, Closing Price to Closing/Fixing price message **Removal**: High % limit, Low % limit fields from Instrument Record and High/Low Limit modification messages **Modification:** Replacement of the ISIN code field with the Exchange symbol field in all information messages. The ISIN code where it is applicable is provided by the reference data message of Category D. **Addition:** The Instrument code (probably Bloomberg code) is provided in the reference data message of Category D **Modification**: The size of all volume fields is 17 numeric characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow **Addition:** A number of new fields concerning the derivatives market has been added to the corresponding reference data messages (Category D) **Removal**: All IRR related fields have been removed from Category A, B, Q, R, G messages. **Addition**: Market Model Typology related fields on Category A, I, T messages **Removal:** Type “C” Set Sequence control message (Category K) **Addition:** Field Reference Index symbol on Category F – Index Record Message **Removal:** Reference ISIN Code field from Category E – Security Baseline Message **Note**: Category E messages are transmitted ONLY for SPOT market instruments
4.0.1	05/12/2013	**Addition:** The Product and Instrument Type fields in Category D – Instrument Record Message

		Modification: The size and the possible values of the Underlying product field in Category D – Instrument Record Message **Modification:** The size of Category O – Instrument State Message **Modification:** The ordering of Reference Index Symbol and Number Of Instrument Composing the Index fields in Category F – Index Record Message **Addition:** The ISIN code field in Category F – Index Record Message
4.0.2	17/02/2014	**Removal:** The 'EUAX' from the Venue id list (Table 6-15) and the 'R' from the message subcategory list (Table 6-3) **Modification:** The Market Id of Index Derivatives market changed from '2' to '1'. The Market Id of Stock Derivatives market changed from '1' to '2'. See Table 6-4 **Addition:** The value '11' (Municipal) in the list of values for the Product field in the Category D – Instrument Record Message **Modification:** The type of Market Mechanism, Trading Mode and Publication Mode fields in Category A – Trade Message and Category T – OTC Message changed from Numeric to Alpha Characters **Modification:** Closing prices (Category L – Closing/Fixing Price Message) will be calculated by the trading platform both for spot AND derivatives market and disseminated through IDS. Closing prices will also be available via the Category G – Instrument Summary Message
4.0.3	28/02/2014	**Addition:** The 'BMFM', 'SBMF' and 'BMFA' strings in the Venue ID table (Table 6-15, Venue IDs (MICs)) **Modification:** The type of Market Mechanism, Trading Mode and Publication Mode fields in Category T – OTC Message changed from Numeric to Alpha Characters **Removal:** The 'T' from the message subcategory list (Table 6-3) **Clarification:** The 'R' value in message subcategory list is used for the identification of REPOS instruments
4.0.4	11/06/2014	**Addition:** Dissemination of Standard Combination market data. Messages for combos may contain negative values in PRICE type fields **Addition:** The character 'V' in the **Table 6-3, Message Subcategories** **Addition:** The new Market IDs ('U','Y', '6', '7', '8') in the Market IDs table (Table 6-4, Market IDs) **Modification:** The value of Order type field in **Category Q – Order Message** and **Category R – Cancelled Order Message** changed from ' ' to 'N' for normal orders.

		Modification: The values of Buy Order type and Sell Order type fields in **Category A – Trade Message** changed from ' ' to 'N' for normal orders. **Addition**: The value 'OOF' (Options on Futures) in the list of values for the Instrument type field in the **Category D – Instrument Record Message** **Addition**: The value '7' (Index) in the list of values for the Underlying Product field in the **Category D – Instrument Record Message**

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1. Introduction

1.1. Information Dissemination System

The Feed Information Center (FIC) provides to the Data Vendors real time, trading-related, data feed information for all instruments traded in the ATHEX-CSE common platform (spot and derivatives markets). The Information Dissemination System (IDS) (or Feed Server (FS) for sort) is the system that accomplishes this task.

In addition to this information, the IDS can disseminate static information for instruments (baselines), financial news, Over The Counter (OTC) trades and IDS/session-related control messages (administrative, keep-alive etc).

The following bullets list these types of data messages and their source of origin.

- **Control Messages**
  - Start of Day
  - Administrative
  - End of Day
  - Line Verification
- **Reference Data (Baseline Data) Messages**
  - Instrument Record
  - Index Record
  - Instrument Baselines
- **Dynamic Data (Market Data) Messages**
  - Trades (Trading & Clearing System)
  - Cancelled Trades
  - Orders
  - Cancelled Orders
  - Quotes
  - Indices
  - Market Status
  - Instrument State
  - High/Low Limits Modification
  - Projected Auction / Auction Open / Projected Close Price
  - Closing/Fixing Prices (Trading & Clearing System)
  - Summaries
  - Exchange Notifications
- **Messages Provided by External Sources**
  - Financial News
  - OTC Trades

1.2. Document Scope

This document specifies the dissemination protocol used by IDS. In its pages the reader would find the following types of information:

- IDS transmission characteristics
- Message packet format
- Message categories, their format, and their dissemination periodicity

1.3. Document Layout

The document is divided in the following seven chapters.

- ***Chapter 1, Introduction.*** This is the current chapter.
- ***Chapter 2, General Overview.*** This chapter provides the general characteristics of the service and its respective Data Feed Specification.
- ***Chapter 3, Message Packet Structure.*** This chapter defines the structural components found in any message packet.
- ***Chapter 4, Message Categories and Formats.*** This chapter lists the different message packet categories, and defines their format and dissemination periodicity.
- ***Chapter 5, Appendix A: Transmission Schedule,*** This chapter defines the order in which the various message packets will be disseminated, for a given market, during the trading session.
- ***Chapter 6, Appendix B: Information on Various Field Codes,*** This chapter provides additional information relevant to the values found in various message categories.
- ***Chapter 7, Appendix C: Parsing Examples,*** This chapter contains the analytical parsing of four message categories.

1.4. Definitions, Acronyms and Abbreviations

Acronym	Explanation
ANSI	American National Standards Institute
ATHEX	Athens Exchange (previously denoted as ASE)
BBO	Best Bid Offer
CSE	Cyprus Stock Exchange
ETF	Exchange Traded Funds
FS	Feed Server
HTML	Hyper Text Markup Language
HW	Hardware
IDS	Information Dissemination System
INAV	Indicative Net Asset Value
IOCP	Internet Oriented Communication Portal
ISO	International Standards Organization
IT	Information Technology
MIC	Market Identification Code

Acronym	Explanation
OASIS	Integrated Automated Trading System
OTC	Over The Counter
SW	Software
XML	eXtensible Markup Language

Table 1-1, Definitions, Acronyms and Abbreviations

1.5. Contact Information

Please address your questions/recommendations pertinent to the contents of this document by mail to:

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1.6. Final Note

The exchange has set a number of rules which ensure the proper and rational use of its computing and network infrastructure. This service is subjected to these rules whenever it utilizes the aforementioned infrastructure.

2. General Overview

2.1. Prologue

This chapter provides the general characteristics of the service and its respective Data Feed Specification. Specifically, it describes the communication protocol used for delivering the data feed packets to the Data Vendors, outlines the formats/data types/messaging standards utilized by the various fields and provides information pertinent to message-parsing.

2.2. Communication Protocols

The service utilizes the TCP/IP protocol for feed transmission. Namely, via the Internet Oriented Communication Portal (IOCP), which is an extension to the IDS infrastructure, the service enables Vendor-Service interaction and facilitates real-time recovery/retransmission features (read the **FIC-IOCP Service Interface Technical Specification** for more information).

2.3. Field Characteristics and ISO Compliance

This data feed specification utilizes ten different types of data fields. Although the specification is a proprietary one the formats of the majority of the fields comply with the relevant ISO standards. Table 2-1 lists these data field types, outlines their format and points out their respective ISO standards.

Field Type	Compliance	Format
Alpha Characters	-	A series of characters, left justified. The empty space on the right side, if existing, is filled with spaces
Numeric Characters	-	A series of numeric characters, right justified. The empty space on the left side, if existing, is filled with zeros. The field can represent a whole number or a float number with **two** or **four** decimals
PRICE	-	9 Numeric characters. The first 5 digits, with an optional sign character, is a whole number and 4 decimal digits follow A Note for BONDS: The price denotes a percentage of the Nominal Value A Note for REPOS: The price denotes an annualized interest rate A Note for Standard Combinations: The price may have negative values This type complies with the general rules of the numeric fields mentioned earlier
TEXT	-	Any printable ANSI character. Right justification is NOT applied
ISIN	ISO 6166	12 alphanumeric characters

MIC	ISO 10383	Four alpha characters (e.g. XATH)
COUNTRY CODE	ISO 3166	Three alpha characters (e.g. GRE)
CURRENCY CODE	ISO 4217	Three alpha characters (e.g. EUR)
TIME	ISO 8601	HHMMSSMMM (H:Hour, M:Minute, S:Second, M:Millisecond)
DATE	ISO 8601	YYYYMMDD (Y:Year, M:Month, D:Day)

Table 2-1, Field Types and ISO Compliance

Note that the IDS uses the **Windows 1253** character coding.

2.4. General Parsing Information

The parsing of the data feed messages described in this document should be a straightforward task. The Vendor's parser should identify a new message after reading the SOH character, conclude the new message and validate its length after reading the ETX character, and compare the parsed LRC character with the one computed. Any message passing both validations is a correct one.

The extraction of the actual information out of a data feed message is also straightforward. The Vendor's parser should map the message's bytes into the relevant fields and extract the information according to their formats.

Although most of the formats listed on Table 2-1 are self-explained, an additional elaboration on the terms **Left** and **Right Justified**, as well as, the particularities of the numeric character fields, might become helpful.

2.4.1. Left Justified (Alpha Character Fields) distinct

Let **n** and **m** to be the size of the field and the data string respectively. If the field is left justified, then the **m** characters of the data string will be copied to the field starting from the left, and all remaining right **n-m** characters will be set to space ' '. (i.e. if the field is the **Symbol** and the string is "**ETE**" then the value entered in this field will be "**ETE** "). **Left justification is applied only to those fields containing text strings**.

2.4.2. Right Justified (Numeric Character Fields)

Let **n** and **m** to be the size of the field and the data string respectively. If the field is right justified, then the **m** characters of the data string will be copied to the field starting from the right, and all remaining left **n-m** characters will be set to zero '0'. (i.e. if the field is the **Price** for a Stock and the price **1,25** then the value entered in this field will be "**000012500**"). **Right justification is applied only to those fields containing numeric strings**. For standard combinations, if the price field of an Order message has value **-00012700** then the value sent to vendors is -1,27.

2.4.3. More on Numeric Character Fields

As already mentioned, the numeric character fields contain values that have two or more decimal digits. The decimal digits represent values either in **thousandths** of a given currency (**Stock prices**) or **percentage** of the Nominal Value (**Bond prices**). For example if the **Price** field of a Trade message for a stock (traded in Euros) has the value of 000153210 then the value sent to the Vendors is 15,321 (15 Euro and 32 Eurocent, and 1 tenth of a Eurocent). If there is no decimal value then the last four characters will be set to zero (i.e. a fifteen-Euro value will look like this 000150000).

There is one exception to this rule. This exception is the **Dividend** field, found inside a Stock baseline (see paragraph 4.5 for more information on baselines). Specifically, the values in this field represent numbers with 7 integral digits and 2 decimal ones. However, the integral digits

represent a number in multiples of a cent and the decimal digits a number in hundredths of a cent. For example if the field has the value of 000153221 for a stock (traded in Euros) then the value sent to the Vendors is 15,3221 (15 Euro, 32 Eurocent, and 21 Hundredths of a Eurocent).

NOTE: The volume(s) in a Bond-related data feed message is/are expressed as multiples of the Bond's nominal value

3. Message Packet Structure

3.1. Message Overview

Every message packet sent to the Data Vendors consists of the structural components listed on Table 3-1.

Message Format	Sizes	Description
SOH (ASCII #1)	1	Start Of Header (SOH), CHAR (1)
Message Header	24	For the description of Message Header see paragraph 3.3.
Message Text	Variable	For the description of Message Text see paragraph 3.4.
ETX (ASCII #3)	1	End of TeXt (ETX), CHAR (3)
LRC	1	The LRC (Longitudinal Redundancy Check) checksum character

Table 3-1, Message Packet general structure

The following five sections will further explain the meaning and purpose of these components.

3.2. Message SOH

This is the first character of every message packet. It takes the value of ASCII code 1 (char(1) in C terminology) and signals the beginning of the packet.

3.3. Message Header

This component is twenty-four characters long and succeeds the SOH character. The format of the Message Header is listed on Table 3-2:

Field	Size	Type	Description
Vendor Identifier	2	Characters	See paragraph 3.3.1.
Message Category	1	Character	See paragraph 3.3.2.
Message Subcategory	1	Character	See paragraph 3.3.3
Venue ID	4	MIC	See paragraph 3.3.4
Message Sequence Number	7	Numeric characters	See paragraph 3.3.5.
Message Time Stamp	9	TIME	See paragraph 3.3.6.
Total Size:	*24*	*Characters*	

Table 3-2, Message Header format

The following six subsections will further explain the meaning and purpose of these fields.

3.3.1. Vendor Identification Field

This field is two characters long, and its value identifies the Data Vendor to whom the given message packet is indented for. There are three possible values for this field. These values are the following:

- " " (two spaces)
- "**TV**" (Test Vendor)
- "**<any two alphabet characters>**" (a unique Data Vendor's code)

If the value is " " then the given packet should be read by all Data Vendors. A Data Vendor should not omit the processing of such packet. Note that every packet sent during the trading session has this value.

If the value is "**TV**" then the given packet is sent for testing purposes. Such packet could be sent during the following two cases:

- The operator performs a full test cycle on the IDS's functional components.
- A Data Vendor wants to test the underlined network connection and\or application.

If the Data Vendor does not participate in the given testing session, then it can discard all such packets.

Finally, if the value is "**<any two alphabet characters>**" then the given packet should be read ONLY by the Data Vendor whose code matches this value. Every Data Vendor has a unique Data Vendor Code declared and stored inside the IDS. Based on that code, the Data Vendor can distinguish which packets should process or not. Note that the IDS would send such packet ONLY during retransmission.

3.3.2. Message Category

This field is a one character long and identifies the category of the transmitted message. The possible values used are:

No	Message Category	Code
1	Control Message	K
2	Trade Message	A
3	Quote Message	B
4	Index Message	C
5	Instrument Record Message	D
6	Instrument Baseline Message	E
7	Index Record Message	F
8	Instrument Summary Message	G
9	Financial News Message	H
10	Canceled Trade Message	I
11	Closing/Fixing Price Message	L
12	Projected-Auction/Auction-Open/Projected Close Price Message	M
13	High/Low Limit Modification Message	N
14	Instrument State Message	O
15	Market Status Message	P

No	Message Category	Code
16	Order Message	Q
17	Canceled Order Message	R
18	Exchange Notifications Message	S
19	OTC Message	T

Table 3-3, Message Categories

Additional information about these categories and their message format can be found in Chapter 4.

3.3.3. Message Subcategory

This field is one character long, identifies the financial product (Bond, Stock, Index, Future Option etc.) whose information is conveyed and imposes a second level of categorization upon this information. Please read paragraph 6.6 for a complete list of the possible subcategories. If the packet's category is not directly related to a specific financial product (for example a Market Status Message) then the IDS will send **one space** as a Message Subcategory.

3.3.4. Venue ID (MIC)

This field is four characters long, utilizes the Market Identification Codes (MIC) defined by ISO 10383 standard and relates the packet's information with the Exchange/Regulated Market publishing it. Paragraph 6.19 lists the MIC codes currently used. If the message packet is IDS and not Exchange related (for example it is a Line Verification Control Message) then the IDS will send **four spaces** as a Venue ID.

3.3.5. Message Sequence Number Field

This field is seven characters long and denotes the sequence number of the given packet. All values in this field are right justified with **zero** (see paragraph 2.4.2 for additional information on left\right justified). The first message sent has a sequence number of **zero**. Every message sent thereafter increments the sequence number by one. Line verification control messages **do not increment** the sequence number.

The sequence number plays a very important role during retransmission. Specifically, the Data Vendor could ask the IDS to retransmit lost message packets ONLY if it specifies the first and the last sequence numbers to be sent. Note that the **retransmitted packets will contain the original sequence numbers**.

3.3.6. Message Time Stamp

This field is nine characters long and contains the time when the given message packet was created. The time stamp has the form HHMMSSMMM, and represents the following local time:

- "HH": for hours
- "MM": for minutes
- "SS": for seconds
- "MMM": for milliseconds

3.4. Message Text Formats

This component is of variable length and its size and format depends mainly on the category and subcategory the given message falls under. For example, if the packet holds a Trade message for a stock (category A, subcategory S) then the size for this component becomes eighty five

characters long and its format is given on Table 4-9. Furthermore, Control messages may vary their Message Text size according to their Message Type value. Read Chapter 4 for more information on the different message categories, and their variations.

3.5. Message ETX

This component is one character long and exists in every message packet. It takes the value of ASCII code 3 (char(3) in C terminology) and signals the end of the packet's text.

3.6. Message LRC

The LRC (Longitudinal Redundancy Check) checksum character signals the packet's end and enables the Data Vendor to verify that the given packet was sent correctly. In order to derive this value the IDS computes sequentially the exclusive OR (XOR) of all message bytes, starting from the message's header up to the ETX (End of TeXt) character (inclusive).

4. Message Categories and Formats

4.1. Prologue

The nineteen category codes listed on section 3.3.2 represent the nineteen different types of message packets. These categories along with their variations (identified via the packet's Message Subcategory field) describe all possible data feed information currently disseminated via IDS.

The following nineteen sections provide additional information about these categories, their variations, their formats and the total sizes of their payload. We remind you that the fixed-size fields listed on Table 3-1 (i.e. SOH, message header, ETX, LRC) exist in **every** message package sent by the IDS. See Appendix C: Parsing Examples for additional information on how to parse a message packet.

4.2. Category K - Control Message Formats

There are four types of control messages (i.e. "A", "F", "H", "T"). Through them, the IDS provide system specific information to Data Vendors. Additional information about these types and the information they provide is given in the following four subsections.

4.2.1. Type "A" Start of Day Control Message

This is the first message transmitted to the Data Vendors and signals the start of the trading day. It also signals that the IDS is ready to process information packets sent by the trading platform.

The IDS will transmit only **one** such control message.

The message's sequence number is **zero** and the format of the Message Text field for this type is given bellow:

Message Text	Size	Type	Description
Message Type	1	Alpha character	The Category's type 'A'
Total Size:	*1*	*Characters*	

Table 4-1, Type "A" Start of Day Message format

4.2.2. Type "F" Administrative Message

This message contains free format text of **any** size between one and four hundred characters. Through this message the exchange would disseminate general information that may be of value to the investors. The message will be written in English.

The format of the Message Text field for this type is given bellow:

Message Text	Size	Type	Description
Message Type	1	Alpha character	The Category's type 'F'
Free Text	1-400	TEXT	The actual message
Total Size:	*1-400*	*Characters*	

Table 4-2, Type "F" Administrative Message format

4.2.3. Type "H" End of Day Control Message

This is the last message transmitted to the Data Vendors and signals the end of the trading day. It also signals that the IDS has concluded its operation.

The IDS will transmit only **one** such control message. No other messages will follow.

The format of the Message Text field for this type is given bellow:

Message Text	Size	Type	Description
Message Type	1	Alpha character	The Category's type 'H'
Total Size:	*1*	*Characters*	

Table 4-3, Type "H" End of Day Message format

4.2.4. Type "T" Line Verification Control Message

This type of message will be transmitted on a minute basis given that the data dissemination line remains idle (i.e. there are not any other messages in the queue pending dissemination). The transmission, if any, will commence after the Start of Day Control Message (type "A") and it can last up until the End of Day Control Message (type "H"). The IDS sends such messages to the Data Vendors in order to verify to them that it continues uninterrupted the processing and transmission of messages. The message's Sequence Number equals the one of the last message sent; thus, this type of message does not increment the Sequence Number counter. Note that these messages are excluded from retransmission.

The format of the Message Text field for this type is given bellow:

Message Text	Size	Type	Description
Message Type	1	Alpha character	The Category's type 'T'
Total Size:	*1*	*Characters*	

Table 4-4, Type "T" Line Verification Message format

4.3. Category D – Instrument Record Message

The IDS transmits one such message for each tradable instrument (e.g. Stock, Bond, Future, Options etc.) at the beginning of each trading day. The High/Low limit values denote the first static limits for the given instrument. Any subsequent changes on these limits or on the instrument's Status will be provided via a Category N – High/Low Limit Modification Message or a Category O – Instrument State Message, respectively. Finally, any subsequent changes on the remaining information (e.g. Start of Day Price, Market ID, etc.) will be provided via a new category D message.

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen-character symbol
Market ID	1	Alpha character	The Instrument's Underlying Market (see paragraph 6.8 for possible values)
Code	12	Alpha character	The Instrument's code.
ISIN Code	12	ISIN CODE	The Instrument's Isin code.
Local Symbol	15	Alpha characters	The Instrument's fifteen-character symbol defined in the Local

<table>
<tr><th>Message Text</th><th>Size</th><th>Type</th><th>Description</th></tr>
<tr><td></td><td></td><td></td><td>language</td></tr>
<tr><td>English Currency Symbol</td><td>3</td><td>CURRENCY CODE</td><td>The currency in which the Instrument is traded.</td></tr>
<tr><td>English Country Symbol</td><td>3</td><td>COUNTRY CODE</td><td>The country where the Instrument was issued</td></tr>
<tr><td>Outstanding shares</td><td>13</td><td>Numeric characters</td><td>The total number of Securities allotted for trading. Applies ONLY to equities related instruments (e.g Stocks, Bonds etc)</td></tr>
<tr><td>Instrument Status</td><td>1</td><td>Alpha character</td><td>The Instrument’s status (see paragraph 6.12 for possible values)</td></tr>
<tr><td>Product</td><td>2</td><td>Alpha character</td><td>Indicates the type of product the instrument is associated with.
<table>
<tr><th>Value</th><th>Meaning</th></tr>
<tr><td>3</td><td>Corporate bond</td></tr>
<tr><td>5</td><td>Equity</td></tr>
<tr><td>6</td><td>Government bond</td></tr>
<tr><td>11</td><td>Municipal</td></tr>
<tr><td>12</td><td>Other</td></tr>
<tr><td>13</td><td>Financing</td></tr>
</table></td></tr>
<tr><td>Instrument type</td><td>10</td><td>Alpha character</td><td>Indicates type of instrument.
<table>
<tr><th>Value</th><th>Meaning</th></tr>
<tr><td>CS</td><td>Common Stock</td></tr>
<tr><td>PS</td><td>Preferred Stock</td></tr>
<tr><td>MF</td><td>Mutual Fund (Exchange-Traded Fund)</td></tr>
<tr><td>EUSOV</td><td>Euro Sovereigns</td></tr>
<tr><td>TB</td><td>Treasury Bill – non US</td></tr>
<tr><td>TINT</td><td>Interest Strip From Any Bond Or Note</td></tr>
<tr><td>TIPS</td><td>Treasury Inflation Protected Securities</td></tr>
<tr><td>TCAL</td><td>Principal Strip Of A Callable Bond Or Note</td></tr>
<tr><td>TPRN</td><td>Principal Strip From A Non-Callable Bond Or Note</td></tr>
<tr><td>CORP</td><td>Corporate Bond</td></tr>
<tr><td>CPP</td><td>Corporate Private</td></tr>
</table></td></tr>
</table>

Message Text	Size	Type	Description
			Placement CB – Convertible Bond DUAL – Dual Currency EUCORP – Euro Corporate Bond EUFRN – Euro Corporate Floating Rate Notes XLINKD – Indexed Linked STRUCT – Structured Notes WAR – Warrant REPO – Repo FUT – Future OPT – Option MLEG – Multi-leg instrument OOF – Options on Futures NONE – No Security Type
Start of Day Price	9	PRICE	Usually the previous day's closing price adjusted, if necessary, from various corporate actions.
Ceiling Price	9	PRICE	The Instrument's ceiling price
Floor Price	9	PRICE	The Instrument's floor price
Underlying Instrument symbol	*15*	*Alpha character*	The fifteen-character symbol of the underlying instrument. Applies to derivatives
Underlying Product	2	Alpha character	Used only for derivatives. Indicates the type of underlying Instrument. Possible values: **Value** – **Meaning** 3 – Corporate bond 5 – Equity 6 – Government bond 7 – Index 12 – Other 13 – Financing SPACE for Non Derivative
Strike Price	*9*	*PRICE*	*The Instrument's Strike Price.* Applies to derivatives.
Contract Size	*5*	*Numeric characters*	*The Instrument's contract size.* Applies to derivatives.

Message Text	Size	Type	Description
Put Or Call	1	Alpha character	*Used only for Options. Indicates whether an option is for put or call.* Possible values: • "0": Put, • "1": Call, • SPACE: Non Option
Exercise Style	1	Alpha character	*Used only for Options. Indicates whether an option is for European or American exercise.* Possible values: • "0": European, • "1": American, • SPACE: Non Option
Expiration Date	*8*	*DATE*	*Instrument's expiration date*
Open Interest	*8*	*Numeric characters*	*Total number of outstanding contracts.* Applies to derivatives.
Reference Instrument symbol	*15*	*Alpha character*	The fifteen-character symbol of the reference instrument. Applies to Repos, Rights, ETFs and Warrants.
Issue Number	*3*	*Numeric characters*	*Applies to derivatives to indicate a versioning of the contract when required due to corporate actions to the underlying*
Total Size:	*181*	*Characters*	

Table 4-5, Category D - Instrument Record Message format

The **Outstanding shares** field will be set to zero for derivatives related instruments (e.g Futures, Options etc). **Strike price** field will be set to zero for ALL instruments except Options. The **contract size** field applies ONLY to derivatives related instruments. For non-derivatives related instruments it will be set to zero. The Isin code field will be set to spaces for derivatives related instruments and Repos. Expiration date will be set to spaces for instruments that never expire.

4.4. Category F – Index Record Message

The IDS transmits one such message for each Index/iNAV defined in the trading platform at the beginning of each trading day. If the baseline information of an Index/iNAV is modified after the initial transmission, the IDS will transmit a new category F message for the given Index/iNAV.

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha characters	The Index's fifteen-character symbol
ISIN Code	12	Alpha characters	The Index's ISIN code
Index Code	12	Alpha characters	

Message Text	Size	Type	Description
Local Name	30	Alpha characters	The Index's full name defined in the Local language
English Name	30	Alpha characters	The Index's full name defined in the English language
Divisor	18	Numeric characters, 14 whole digits and 4 decimal places	Denotes the Base Value in Indices, or the Fund's total number of shares (the latter applies to ETFs)
Previous Day's Closing Reference Value	9	Numeric characters, the first 5 digits is a whole number, right justified, zero filled as required, 4 decimal digits follow	Denotes the last price calculated for an Index on the previous day, or the Fund's Net Asset Value (the latter applies to ETFs)
Adjustment Factor	5	Numeric characters, the first 1 digit is a whole number, right justified, zero filled as required, 4 decimal digits follow	A value between 0.0000 and 1.0000 used mainly for the calculation of the Fund's Indicative Net Asset Value.
Assets	15	Numeric characters, the first 13 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow	Denotes the Fund's Assets and applies only to ETFs. Indices have this field filled with zeros
Liabilities	15	Numeric characters, the first 13 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow	Denotes the Fund's Liability and applies only to ETFs. Indices have this field filled with zeros
Reference Index symbol	*15*	*Alpha character*	The fifteen-character symbol of the referenced index. Applies only to Index ETFs.
Number of Instruments Composing the Index	3	Numeric characters	Denotes the number of instruments composing the Index
Composition Information per Instrument			
Instrument Symbol	*15*	*Alpha Character*	The Instrument's fifteen - character symbol
Instrument's Adjustment Factors%	*5*	*Numeric characters, the first 3 digits is a whole number, right justified, zero filled as*	*The factor with which the instrument participates in the composition of the Index or Fund*

Message Text	Size	Type	Description
		required, 2 decimal digits follow	
Instrument Price	*9*	*PRICE*	*The instrument's price*
Number of Instruments	*13*	*Numeric characters*	*Denotes the Security's number of outstanding shares if it is an Index, or the number of shares (of the given Security) comprising the Fund (the latter applies to ETFs)*
Total Size:	*179+(**n***42)*	*Characters*	

Table 4-6, Category F – Index Baseline Message format

Where **n** equals to the value defined within the **Number of Instruments Composing the Index** field and **42** is the size of each **Composition Information** group.

4.5. Category E – Security Baseline Message

The IDS transmits one such message for each security of the **SPOT** market at the beginning of the trading day and ONLY if one of the following conditions is satisfied:

- a new security has been entered in the trading platform; thus a new baseline has been created
- the baseline information of the given security was changed

Under rare circumstances (i.e. IDS-failure, wrong baselines data entry, etc.), a security's baseline information might be transmitted more than once.

There are two variations of this category; namely, one for bonds and one for all the other tradable securities. The value of the **Message Subcategory** field identifies the variation as well as the respective format.

4.5.1. All Tradable Message Subcategories Except 'B'

If the subcategory is NOT 'B', then it denotes a Security Baseline variation (other than Bond) with the following Message Text field format:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen-character symbol
ISIN Code	12	ISIN	The Security's ISIN code
Market Id	1	Alpha Characters	The Security's Underlying Market (see paragraph 6.8 for possible values)
Local Company Name	30	Alpha characters	The Company name defined in the Local language
English Company Name	30	Alpha characters	The Company name defined in the English language
Local Category Name	20	Alpha characters	The Local Name of the Sector

Message Text	Size	Type	Description
			under which the Company is listed.
English Category Name	20	Alpha characters	The English Name of the Sector under which the Company is listed
Market Segment	1	Alpha character	The exchange's Segment in which the security belongs
Dividend	9	Numeric characters, the first 7 digits is a whole number in Eurocent, right justified, zero filled as required, 2 decimal digits follow	The amount returned to security-holders, for each Security, via divided
Issue Date	8	DATE	The Security's issue day
Removal Date	8	DATE	The Security's removal day
Pre-dividend	7	Numeric characters, the first 5 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow	The amount returned to security-holders, for each Security, via pre-dividend
Nominal Value	9	PRICE	The Security's nominal value
Shares Issued	13	Numeric characters	The total number of Securities issued by the company
Outstanding Shares	13	Numeric characters	The total number of Securities allotted for trading
Maximum Trading %	3	Numeric characters	The maximum amount o securities eligible for trading each day, in percentage
Trading Unit	3	Numeric characters	The Security's minimum lot size
Coupon Number	2	Numeric characters	The Security's current cashable coupon
Last Coupon Date	8	DATE	The payment date of the previous coupon
Introduction Price	9	PRICE	The price of the Security when it was first entered into the market.
Company Code	6	Numeric characters	An ATHEX-specific code which defines uniquely the listed Company
Security Code	6	Numeric characters	An ATHEX-specific code which defines uniquely the security. The code is issued upon the security's entry into the trading platform and becomes void

Message Text	Size	Type	Description
			upon its exit
Total Size:	*233*	*Characters*	

Table 4-7, Category E – Security Baseline Message format (Except Bonds)

4.5.2. Message Subcategory 'B' (Bond Baseline)

It is a Bond Baseline variation whose Message Text field format is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen-character symbol
ISIN Code	12	ISIN	The Bond's ISIN code
Market Id	1	Alpha Characters	The Bond's Underlying Market (see paragraph 6.8 for possible values)
Local Full Name	30	Alpha characters	The Bond's name defined in the Local language
English Full Name	30	Alpha characters	The Bond's name defined in the English language
Local Short Name	8	Alpha characters	The Bond's short name defined in the Local language
English Short Name	8	Alpha characters	The Bond's short name defined in the English language
Asset Local Group Description	20	Alpha characters	A detailed description of the Asset Type, in the Local language
English Asset Group Description	20	Alpha characters	A detailed description of the Asset Type, in the English language
Issuer	30	Alpha characters	Contains the Bond issuer's name
Market Segment	1	Alpha Character	The exchange's Segment in which the bond belongs
Issue Date	8	DATE	The date the Bond was issued
Maturity Date	8	DATE	The maturity date of the Bond
Max Nominal Value	10	Numeric characters (8 is a whole number, right justified, zero filled, 2 decimal digits follow)	The maximum denomination (face value) of the Bond. The minimum nominal value could be derived via the "Nominal Trading Unit" field.
Payment Type	1	Numeric character.	The way in which the given Bond pays the holder. Current values: • "0": Discounted

Message Text	Size	Type	Description
			• "1": Zero Coupon • "2": Nominal.
Nominal Trading Unit	10	Numeric characters (8 is a whole number, right justified, zero filled, 2 decimal digits follow)	The trading unit for the specific Bond (lowest denomination)
Issue Date in Trading Platform	8	DATE	Denotes the date when the electronic trading for the given Bond was initially started
Number of Securities	13	Numeric characters	The number of Bonds issued
Tax Rate	5	Numeric characters (3 is a whole number, right justified, zero filled, 2 decimal digits follow)	The percentage with which the given Bond will be taxed.
Coupon Type	1	Character	The type of the coupon, either fixed interest rate noted as "0" or floating interest rate noted as "1".
Index	1	Characters	If the Bond has a floating interest rate then this field indicates the interest rate related to the given Bond. Possible values are: • "0": One Year Treasury Bills • "1": Euribor • "2": Libor
Index Spread	5	Numeric characters (3 is a whole number, right justified, zero filled, 2 decimal digits follow)	If the Bond has a floating interest rate then this field contains the percentage of the Bond's spread based on the interest rate indicated by the Index field
Current Coupon Rate	5	Numeric characters (3 is a whole number, right justified, zero filled, 2 decimal digits follow)	Current interest rate
Initial Coupon Rate	5	Numeric characters (3 is a whole number, right justified, zero filled, 2 decimal digits	Initial interest rate.

Message Text	Size	Type	Description
		follow)	
Periodicity	1	Characters	The frequency in which the Bond pays interest. Values: • "0": Every month • "1": Every two months • "2": Every three months • "3": Every four months • "4": Every six months • "5": Every nine months • "6": Every year
Gross Coupon Amount	10	Numeric characters (8 is a whole number, right justified, zero filled, 2 decimal digits follow)	The gross amount in the issue-currency (before tax deduction) paid by the coupon.
Net Coupon Amount	10	Numeric characters (8 a whole number right justified, zero filled, 2 decimal digits follow)	The net amount in the issue-currency (after tax deduction) paid by the coupon.
Current Coupon Ex-Date	8	DATE	Expiration date of the current coupon.
Current Coupon Payment Date	8	DATE	Payment date of the current coupon.
Current Coupon Beginning Date	8	DATE	Beginning date of the current coupon.
Issued Amount	17	Numeric characters	The amount of the issued Bonds entered in the system for trading
Coupon No.	3	Numeric characters	Sequence number of the current coupon.
Days' Basis	1	Numeric characters	The number of days as a basis for the IRR and the accrued interest calculations. Values: • "0": 30/360 • "1": 30/365 • "2": Actual/360 • "3": Actual/365 • "4": Actual/Actual
Issuer Code	6	Numeric characters	An ATHEX-specific code which defines uniquely the Issuer
Bond Code	6	Numeric characters	An ATHEX-specific code which defines uniquely the security.

Message Text	Size	Type	Description
			The code is issued upon the bond's entry into the trading platform and becomes void upon its exit
Total Size:	*333*	*Characters*	

Table 4-8, Category E – Bond Baseline Message format

In generally, the Nominal type bonds are priced in percentage of their nominal value. Whereas, the Discounted and Zero Coupon type bonds are priced in yield.

4.6. Category A – Trade Message

The IDS transmits this message category when an instrument trade occurs in the trading platform or the clearing system with the following Message Text field format:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen-character symbol
Board ID	1	Alpha character	The trading board under which the instrument is being traded (see paragraph 6.9 for possible values)
Trade number	6	Numeric Characters	Unique for the trading day
Buy order number	8	Numeric Characters	The sequence number of the buy-side order being matched (see the 'Order Number' field of Category Q – Order Message)
Buy order date	8	DATE	The date the buy-side order was entered into the trading system
Sell order number	8	Numeric Characters	The sequence number of the sell-side order being matched (see the 'Order Number' field of Category Q – Order Message)
Sell order date	8	DATE	The date the sell-side order was entered into the trading system
Price	9	PRICE	The trade's price
Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The trade's volume
Total Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2	The total number of stocks/contracts traded up to that point

Message Text	Size	Type	Description
		decimal digits follow.	
Trade Type	1	Alpha Character	'N': NEW 'E': EDIT
Trade Source	1	Alpha Character	T: Trading Platform C: Clearing System
Market Mechanism	1	Alpha Character	Fundamental functional market mechanism (see paragraph Market Model Typology (MMT) for details)
Trading Mode	1	Alpha Character	Defines the trading mode under which the trade was executed (see paragraph Market Model Typology (MMT) for details)
Transaction Category	1	Alpha Character	Provides information on the type of transaction (see paragraph Market Model Typology (MMT) for details)
Negotiated Transaction Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Crossing Trade Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Modification Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Trade Condition Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Publication Mode	1	Alpha Character	It defines the mode in which the transaction is being published (see paragraph Market Model Typology (MMT) for details)
Buy order type	1	Alpha character	'B' Strategy (Combo) 'Q' Quote 'N' Normal
Sell order type	1	Alpha character	'B' Strategy (Combo) 'Q' Quote 'N' Normal
Total Size:	109	Characters	

Table 4-9, Category A – Trade Message format

The **Buy order number**, **Buy order date**, **Sell order number**, **Sell order date** fields values will be set to zero in the following cases

- the Board ID field value is set to 'B' (Pre-Agreed Board, see paragraph 6.9)
- the Trade Source field is set to 'C' (Clearing System)

4.7. Category I - Cancelled Trade Message

The IDS transmits this message category when a instrument trade cancellation occurs in the trading platform or clearing system with the following Message Text field format:

Message Text	Size	Type	Description
Symbol	15	Alpha Character	The Instrument's fifteen - character symbol
Board ID	1	Alpha character	The trading board under which the Instrument is being traded (see paragraph 6.9 for possible values)
Trade number	6	Numeric Characters	Unique for the trading day
Buy order number	8	Numeric Characters	The sequence number of the buy-side order being matched (see the 'Order Number' field of Category Q – Order Message)
Buy order date	8	DATE	The date the buy-side order was entered into the trading system
Sell order number	8	Numeric Characters	The sequence number of the sell-side order being matched (see the 'Order Number' field of Category Q – Order Message)
Sell order date	8	DATE	The date the sell-side order was entered into the trading system
Cancelled Trade Price	9	PRICE	The price of the cancelled trade
Cancelled Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The volume of the cancelled trade
Total Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal	The total number of Instrument traded in the current trading day up to that point (adjusted according to the cancelled

Message Text	Size	Type	Description
		digits follow.	volume)
Trade Type	1	Alpha Character	'C': CANCEL
Trade Source	1	Alpha Character	T: Trading Platform C: Clearing System
Market Mechanism	1	Numeric Characters	Defines the fundamental functional market mechanism (see paragraph Market Model Typology (MMT) for details)
Trading Mode	1	Numeric Characters	Defines the trading mode under which the trade was executed (see paragraph Market Model Typology (MMT) for details)
Transaction Category	1	Alpha Character	Provides information on the type of transaction (see paragraph Market Model Typology (MMT) for details)
Negotiated Transaction Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Crossing Trade Indicator	1	Alpha Character	see paragraph Market Model Typology (MMT) for details
Modification Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Trade Condition Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Publication Mode	1	Numeric Character	It defines the mode in which the transaction is being published (see paragraph Market Model Typology (MMT) for details)
Buy order type	1	Alpha character	'B' Strategy (Combo) 'Q' Quote 'N' Normal
Sell order type	1	Alpha character	'B' Strategy (Combo) 'Q' Quote 'N' Normal

Message Text	Size	Type	Description
Total Size:	109	Characters	

Table 4-10, Category I –Cancelled Trade Message format

4.8. Category Q – Order Message

The IDS will transmit this message category under the following three cases:

- At the beginning of the trading session if the order's lifetime spans multiples days (applies only to orders with **Order lifetime** field equal to 'C' or 'E')
- When a new order is entered in the trading platform
- When an already placed order is changed (e.g. Order status, Volume, Price etc.)

In the last case the **Order number and Order entry date** fields can be used to relate the reported modification with the original order..

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen - character symbol
Board ID	1	Alpha character	The trading board under which the instrument is being traded (see paragraph 6.9 for possible values)
Order number	8	Numeric Characters	The order's sequence number
Order entry date	8	DATE	The date the order entered the trading system
Order status	2	Alpha Characters	The status of the order (see paragraph 6.13 for possible values)
Side	1	Alpha character	The order's side (see paragraph 6.14 for possible values)
Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The order's disclosed volume
Matched Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The portion of the order's Volume that has been matched thus far(i.e. a partially matched order)
Price	9	PRICE	The order's price

Message Text	Size	Type	Description
Original price type	1	Alpha character	The original price type (see paragraph 6.15 for possible values)
Order lifetime	1	Alpha character	The order's lifetime (see paragraph 6.16 for possible values)
Special conditions	1	Alpha character	The condition of the order if available (see paragraph 6.17 for possible values)
Condition volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The volume pertinent to a special condition of type 'M' or 'O' (see paragraph 6.17)
Order Release Date	8	DATE	The date the order was released to the Order Book or (for orders that undergo time priority changes) the date when the aforementioned change occurs
Order Release Time	9	TIME	The time the order was released to the Order Book or (for orders that undergo time priority changes) the time at which the aforementioned change occurs
Last Order Update Date	8	DATE	The date of the last order update/modification
Order Type	1	Alpha character	'B' Strategy (Combo) 'Q' Quote 'N' Normal
Total Size:	124	Characters	

Table 4-11, Category Q –Order Message format

The **Price** field will be set to zero under the following cases:

a) if the **Original price type** field has either the value 'M' or 'O' (see Table 6-11 for more information)

b) if the **Original price type** field has the value 'C' (see Table 6-11 for more information) and the security's **Phase Id** field contains a value other than 'C' (see Table 6-7 for more information).

In addition the **Condition volume** field will be set to zero if the **Special Conditions** field is NOT 'M' (Minimum Fill) or 'O' (Multiples Off).

4.9. Category R – Cancelled Order Message

The IDS will transmit this message category whenever an order is cancelled.

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen - character symbol
Board ID	1	Alpha character	The trading board under which the security is being traded (see paragraph 6.9 for possible values)
Order number	8	Numeric Characters	The order's sequence number
Order entry date	8	DATE	The date the order entered the trading system
Side	1	Alpha character	The order's side (see paragraph 6.14 for possible values)
Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The order's disclosed volume
Matched Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The portion of the order's Volume that has been matched thus far (i.e. a partially matched order)
Price	9	PRICE	The order's price
Original price type	1	Alpha character	The order's original price type (see paragraph 6.15 for possible values)
Order lifetime	1	Alpha character	The order's lifetime (see paragraph 6.16 for possible values)
Special conditions	1	Alpha character	The condition of the order if available (see paragraph 6.17 for possible values)
Condition volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The volume pertinent to a condition of type 'M' or 'O' (see paragraph 6.17)
Order Type	1	Alpha character	'B' Strategy (Combo) 'Q' Quote 'N' Normal

Message Text	Size	Type	Description
Total Size:	97	Characters	

Table 4-12, Category R –Cancelled Order Message format

The **Price** field will be set to zero if the **Original price type** field has a value other than 'L'. In addition the **Condition volume** field will be set to zero if the **Special Conditions** field is NOT 'M' (Minimum Fill) or 'O' (Multiples Off).

4.10. Category B – Quote Message

The IDS transmits this message category when at least one side (i.e. Bid or Ask) of the supported Quote levels for the given instrument becomes changed. The number of Quote levels contained in the messages is defined by the **Quotes Levels** field. Note that the IDS will not send a Quote level if it contains no data (i.e. prices and volumes equal to zero).

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen-character symbol
Quote Levels	3	Numeric characters	The number of Bid/Ask levels (i.e. Prices, volumes and orders) contained in this message for the given instrument
Level Format			
Bid Price	*9*	*PRICE*	*The best Bid price*
Bid Size	*17*	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	*The best Bid volume*
Bid orders	*7*	*Numeric characters*	*The number of orders composing the current bid level*
Ask Price	*9*	*PRICE*	*The best Ask price*
Ask Size	*17*	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	*The best Ask volume*
Ask orders	*7*	*Numeric characters*	*The number of orders composing the current ask level*

Message Text	Size	Type	Description
Total Size:	*18+(**n***66)*	*Characters*	

Table 4-13, Category B –Quote Message format

Where **n** equals to the value defined within the **Quote Levels** field and **66** is the size of each **Bid/Ask** level.

4.11. Category C - Index Message

The IDS transmits this message category every time the trading platform calculates the price of a given index.

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Index's fifteen-character symbol
Index Price	9	Numeric characters, the first 5 digits is a whole number, right justified, zero filled as required, 4 decimal digits follow	The calculated value of the Index
Total Size:	*24*	*Characters*	

Table 4-14, Category C - Index Message format

4.12. Category M – Projected-Auction / Auction-Open / Projected Close Price Message

The following three bullets explain when the IDS will transmit a Projected-Auction, Auction-Open and Projected Close Price message:

- **Projected Auction**: The trading platform allows a market to have a Projected Auction Price calculation phase. During that phase, the trading platform will calculate and send the Projected Auction Price for each instrument participating in this market, whenever the instrument's number of matchable orders changes. Such messages will also be sent for a security during an Auction caused by a volatility interrupter or other Halt reason.
- **Auction Open**: Whenever a market opens from an Auction the trading platform, and subsequently the IDS, will calculate and send the Auction Open price for all instruments listed under this market. Only ONE such message will be sent for each instrument after each Auction opening. One such message will also be sent for an instrument if it opens from an Auction caused by a volatility interrupter or other Halt reason. Please note that such a message will NOT be sent at the opening of a Closing Auction if the Closing Price becomes derived from an algorithm and NOT from the opening of that auction
- **Projected Close:** This flag applies ONLY to those markets having a closing auction phase and ONLY if their listed instruments are setup to follow a given set of closing auction rules. The IDS will transmit one such message whenever the projected close price or volume changes. Please note that the trading server uses a given set of business rules to derive these values and these values can be equal to:

  a) the Projected Auction price and volume

  b) the Alternative Close price and volume computed by the Exchange's algorithm of choice. Although the Alternative Close Price will always be greater than zero the

same does not hold true for its volume. The volume can equal to zero if there is no order matching at the given price.

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha Character	The Instrument's fifteen - character symbol
Price Flag	1	Alpha character	Possible values: • "0": for Projected Auction price, • "1": for Auction Open Price • "2": for Projected Close
Price	9	PRICE	The Instrument's projected or auction-open price, or the Instrument's projected close price when applicable.
Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The Instrument's projected or auction-open or Projected Close volume
Total Size:	*42*	*Characters*	

Table 4-15, Category M – Proj.-Auction / Auction-Open / Proj. Close Price Message

If during the opening of the Auction, no trade occurs for a certain instrument, the Auction-Open Price will be set to zero.

NOTE: In order to determine which business rule the trading system uses in any given time during the closing auction, you must compare the price and volume between the latest Projected Auction message and the respective Projected Close one. In that case:

1. If the two messages carry equal values (prices / volumes) then the Projected Close values are derived from the closing auction (i.e. equal to Projected Auction)
2. If they differ then the Projected Close values are derived by the algorithm of choice (i.e. equal to Alternative Close)

4.13. Category N – High/Low Limit Modification Message

The IDS will transmit this message category if the static High and Low limits for the given instrument change.

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha Character	The Instrument's fifteen - character symbol

Message Text	Size	Type	Description
Ceiling Price	9	PRICE	The Instrument's ceiling price
Floor Price	9	PRICE	The Instrument's floor price
Total Size:	*33*	*Characters*	

Table 4-16, Category N – High/Low Limit Modification Message format

4.14. Category O – Instrument State Message

The IDS will transmit this message category whenever the instrument changes its trading phase (i.e. SPACE, pre-call, continuous, closing price trading, stop) or its status (i.e active, halt, suspended, resume).

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen - character symbol
Phase ID	1	Alpha character	The Instrument's trading phase (i.e. Auction, Continuous, etc.) See paragraph 6.11 for possible values
Instrument Status	1	Alpha character	The Instrument's status (i.e. Halt, Suspend etc.) See paragraph 6.12 for possible values
Halt/Suspend Reason	1	Alpha character	The Reason for Halting or Suspending the Instrument (see paragraph 6.5 for possible values)
Total Size:	*18*	*Characters*	

Table 4-17, Category O – Instrument State Message format

4.15. Category P – Market Status Message

The IDS will transmit this message category whenever the market changes its status (i.e. pre-call, projected auction, continuous, closing, end-of-trading, halt).

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Market ID	1	Alpha character	The Market's ID (see paragraph 6.8 for possible values)
Market Status	1	Alpha character	The Market status (see paragraph 6.10 for possible

Message Text	Size	Type	Description
			values)
Total Size:	*2*	*Characters*	

Table 4-18, Category P – Market Status Message format

4.16. Category G – Instrument Summary Message

The IDS transmits this message category for each instrument right after the corresponding market status changes to End of Day (see paragraph 4.15 and Table 6-6) with the following Message Text field format:

Message Text	Size	Type	Description
Symbol	15	Alpha character	The Instrument's fifteen-character symbol
Opening Price	9	PRICE	The Instrument's opening price
High	9	PRICE	The highest price with which the given Instrument was traded, during the trading day
Low	9	PRICE	The lowest price with which the given Instrument was traded, during the trading day
Last	9	PRICE	The last price with which the given Instrument was traded, during the trading day
Closing Price	9	PRICE	The Instrument's closing price
Start Of Day Price	9	PRICE	Usually the previous day's closing price adjusted, if necessary, from various corporate actions.
Total Volume	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The sum of the volumes of all Instrument trades occurred, during the trading day
Total Value	17	Numeric Characters, the first 15 digits is a whole number, right justified, zero filled as required, 2 decimal digits follow.	The total value traded in the given Market for the given Instrument, during the trading day
Total Size:	*103*	*Characters*	

Table 4-19, Category G – Instrument Summary Message format

4.17. Category L – Closing/Fixing Price Message

The IDS transmits one such message for every instrument whose closing price has been calculated by the trading platform. If for any reason the trading platform recalculates the closing price of an instrument then the IDS will disseminate a new category L message for the given instrument with the new price.

The IDS will also transmit this message category when the Clearing System concludes the calculation of the fixing price for each derivatives related instrument. In this case an update of Open Interest of the Instrument is also sent by the same Category L message

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Symbol	15	Alpha Character	The Instrument's fifteen - character symbol
Closing/Fixing Price	9	PRICE	The Instrument's closing/fixing price.
Open Interest	*8*	*Numeric characters*	*Total number of outstanding contracts*
Total Size:	*32*	*Characters*	

Table 4-20, Category L – Closing Price Message format

For non-derivatives related instruments the field "Open Interest" will be set to zero.

4.18. Category S – Exchange Notifications Message

There is no predefined event for triggering IDS to transmit this message category. Nonetheless, the format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
Notification Headline in English	72	Alpha characters	The headline of the notification in the English language
Notification Headline in Local	72	Alpha characters	The headline of the notification in the Local language
Text Size in English	5	Numeric Characters	The size of the notification Text written in the English language. The size cannot be more than 10KBytes
Text Size in Local	5	Numeric Characters	The size of the notification Text written in the Local language. The size cannot be more than 10Kbytes
English Notification Text	n	Alpha Characters	The notification Text written in the English language
Local Notification	m	Alpha Characters	The notification Text

Message Text	Size	Type	Description
Text			written in the Local language
Total Size:	154 + n+ m	Characters	

Table 4-21, Category S – Exchange Notifications Message format

Where **n** and **m** are the values defined within the **Text Size in English** and **Text Size in Local** fields respectively. These values cannot exceed the size of 10Kbytes each.

4.19. Category H – Financial News Message

The IDS will transmit such message whenever a financial event (e.g. corporate news, action etc.) gets recorded to the Feed Service. The message's content will be a valid XML Document which can be validated by an XSD. This XSD will be provided by the Exchange and could be located at a site accessible by the Data Vendors. The format of the Message Text field for this category is given below: category

Message Text	Size	Type	Description
Content Format	1	Alpha character	The Content's format (currently only XML). See paragraph 6.1 for possible values
Product ID	2	Numeric characters	Identifies the grouping of various Financial News types into a distinct product. The values of this field can range from 00 up to 99 (see paragraph 6.20 for further information).
Content Size	7	Numeric characters	The Content's total size (including tags, special characters, etc.)
Content	N	TEXT	The actual Content
Total Size:	*10+n*	*Characters*	

Table 4-22, Category H – Financial News Message format

Where **n** equals to the value defined within the **Content Size** field.

4.20. Category T – OTC Message

The IDS will transmit this message category whenever the entry or the cancellation of an OTC trade is reported to the IDS

The format of the Message Text field for this category is given below:

Message Text	Size	Type	Description
ISIN Code	12	ISIN	The OTC's underlying ISIN Code

Message Text	Size	Type	Description
Symbol	50	Alpha Characters	Description of the underlying instrument
OTC Date	8	DATE	The date that OTC occurred
OTC Time	9	TIME	The time that OTC occurred
OTC Price	20	Numeric Characters	The price (including decimals) as a whole number
Decimals in Price	2	Numeric Characters	The number of decimals contained within Price
OTC Currency	3	CURRENCY CODE	The currency in which the OTC trade was made
OTC Volume	30	Numeric Characters	The volume (including decimals) as a whole number
Decimals in Volume	2	Numeric Characters	The number of decimals contained within Volume
OTC Status	1	TEXT	The status of the OTC trade (see paragraph 6.18 for possible values)
OTC Type	1	TEXT	The type of the OTC Trade (see paragraph 6.21 for possible values)
OTC Price Type	1	TEXT	The price type for Bond-related OTC trades (see paragraph 6.22 for possible values).
Trade Source	1	Alpha Character	T: Trading Platform C: Clearing System
Market Mechanism	1	Alpha Character	Defines the fundamental functional market mechanism (see paragraph Market Model Typology (MMT) for details)
Trading Mode	1	Alpha Character	Defines the trading mode under which the trade was executed (see paragraph Market Model Typology (MMT) for details)
Transaction Category	1	Alpha Character	Provides information on the type of transaction (see paragraph Market Model Typology (MMT) for details)
Negotiated Transaction Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Crossing Trade Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Modification	1	Alpha Character	See paragraph Market Model

Message Text	Size	Type	Description
Indicator			Typology (MMT) for details
Trade Condition Indicator	1	Alpha Character	See paragraph Market Model Typology (MMT) for details
Publication Mode	1	Alpha Character	It defines the mode in which the transaction is being published (see paragraph Market Model Typology (MMT) for details)
Total Size:	*148*	*Characters*	

Table 4-23, Category T – OTC Message format

The **OTC Price** field MUST always contain values greater than zero.

Furthermore, the value of the **OTC Price Type** field will be set to empty (SPACE) if the OTC trade does not involve bonds.

5. Appendix A: Transmission Schedule

Table 5-1 lists the message categories and the order in which they are disseminated during a trading session.

Messages	Level	Cate-gory	Transmitted
Start of Day Control Message	1	K	At the start of the trading day. This is the first message sent
Instrument Record Messages*	1	D	At the beginning of the trading day and before the opening of all markets; otherwise, when an intraday modification occurs
Index Record Messages *	1	F	At the beginning of the trading day and before the opening of all markets; otherwise, when an intraday modification occurs
Index Messages *	1	C	Whenever the trading platform calculates them
Baseline Format Messages *	1	E	At the beginning of the trading day and before the opening of all markets; otherwise, when an intraday modification occurs
Administrative Control Messages *	1	K	Whenever decided by the exchange
Financial News Messages *	1	H	Whenever a financial event becomes recorded to the service
Line Verification Control Message *	1	K	Every minute after the Start of Day Control Message
OTC Messages *	1	T	Whenever the entry or the cancellation of an OTC trade is reported to the IDS
Exchange Notifications Messages*	1	S	Whenever decided by the exchange
Order Message **	2 and 3	*Q*	Whenever an order's lifetime spans multiple days, or a new order is entered in the trading platform, or an already placed order undergoes modification
Market Status Message	*2*	*P*	Whenever the market changes its status
Instrument State Message	*2*	*O*	Whenever a trading phase or status change occurs for a given instrument
Projected Auction Price (when supported)	*2*	*M*	Whenever calculated by the trading platform
Auction Open Price	*2*	*M*	Whenever calculated by the trading platform
*Trade Messages****	*3*	*A*	When a trade occurs
High/Low Limits	*2 and 3*	*N*	Whenever A High/Low limit change

*Modification Messages***			occurs for a given security
*Quote Messages **	*2 and 3*	*B*	When there is a change in any of the Best Bid\Offer levels
*Cancelled Trade****	*3*	*I*	When a trade is cancelled
*Cancelled Order Message***	*3*	*R*	When an order is cancelled
Projected Close Price	*2*	*M*	Whenever calculated by the trading platform
Closing/Fixing Price	*2*	*L*	Whenever calculated by the trading platform or clearing system
Summary Messages	*2*	*G*	Right after the Market Close Control Message is sent for the given market
End of Day Control Message	1	K	At the end of the trading day

Table 5-1, Messages transmission schedule

Note that the messages written in Italics are scheduled according to the schedule of a specific market and not of the entire trading session; whereas, the messages written as Underlined are scheduled according to the schedule of the entire trading session.

Furthermore, the mark '*' defines these messages that could be, and are sent at any point and time during Levels 1, 2 and 3, of the entire trading session schedule. The mark '**' defines these messages that could be, and are sent at any point and time during Levels 2 and 3, of the given market schedule. Finally, The mark '***' defines these messages that could be, and are sent at any point and time during Level 3, of the given market schedule.

6. Appendix B, Information on Various Field Codes

6.1. Content Format

It defines the format of the Financial News-message content. Table 6-1 lists these formats and their description.

Content Format	Format Description
X	XML

Table 6-1, Content Format

6.2. Country Code

The three letter representation of the country's name defined by the ISO 3166 standard.

6.3. Currency Code

The three letter representation of the country's currency defined by the ISO 4217 standard.

6.4. Symbol

It is symbol of the tradeable instrument (stock or bond) or Index, written in the English Language. The symbol name could be up to 15 characters long.

6.5. Halt/Suspended

It defines the reason why a given instrument was halted or suspended. Table 6-2 lists these reasons and their description.

Halt/Suspend Reason	Reason Description
SPACE	Default value (No Reason)
E	Exchange
V	Volatility Interrupter

Table 6-2, Halt/Suspend Reason

6.6. Message Subcategory

It imposes a second level of categorization upon the packet's information. Table 6-3 lists the possible values.

Code	Message Subcategory
SPACE	Generic (applicable mainly to category K and P messages)
B	Bond
E	ETF
I	Stock Index
N	ETF Indicative Net Asset Value (INAV)

S	Stock/Rights
W	Warrant
O	Option
F	Future
R	Repos
V	Standard Combinations

Table 6-3, Message Subcategories

6.7. Local Symbol

It is symbol of the tradeable instrument (stock, bond etc) or Index, written in the Local Language. The symbol name could be up to 15 characters long.

6.8. Market ID

The ID used by the trading platform to uniquely identify a Market and group/list under it a number of instruments.

J	Emerging Companies for Bonds	XECM
Q	ETFs	XCYS
1	Index Derivatives	XADE
2	Stock Derivatives	XADE
3	Repos	XADE
U	Main	SBMF
Y	Alternative for Stocks	BMFA
6	EU Stock Derivatives	BMFM
7	Index, Currency and Commodity Derivatives	BMFM
8	US Stock Derivatives	BMFM

Table 6-4 lists these IDs, their description and their Venue ID of Origin.

Market ID	Market Description	Venue ID
M	Main	XATH
B	Low Dispersion	XATH
C	Surveillance	XATH
Z	Stocks to be delisted	XATH
O	Bonds	XATH
T	ETFs	XATH
W	Warrants	XATH
F	Alternative for Stocks	ENAX
G	Alternative for Bonds	ENAX
E	Forced Sales	XATH
A	Main	XCYS
P	Parallel	XCYS
S	Special Conditions	XCYS
L	Special Characteristics	XCYS
X	Corporate Bonds	XCYS
H	Government Bonds	XCYS
I	Emerging Companies for Stocks	XECM

J	Emerging Companies for Bonds	XECM
Q	ETFs	XCYS
1	Index Derivatives	XADE
2	Stock Derivatives	XADE
3	Repos	XADE
U	Main	SBMF
Y	Alternative for Stocks	BMFA
6	EU Stock Derivatives	BMFM
7	Index, Currency and Commodity Derivatives	BMFM
8	US Stock Derivatives	BMFM

Table 6-4, Market IDs

6.9. Board ID

It defines uniquely the Board under which the instruments of a given Market can be traded. Table 6-5 lists these IDs and their description.

Board ID	Board Description
M	Main Board
O	Odd Lot Board
B	Pre-Agreed Board
S	Special Terms (with the Hit & Take Method) Board
F	Forced Sales (with the Hit & Take Method) Board

Table 6-5, Board IDs

6.10. Market Status

It defines the status of a given market. Table 6-6 lists these statuses and their description.

Market Status	Status Description
P	Pre-Call
J	Projected Auction
T	Continuous / Auction Event
C	Closing Price Trading
R	Run Off
E	End of Day
H	Halt

Table 6-6, Market Statuses

Please note that the Run Off status (‘R’) signals the conclusion of all trading activity pertinent to the instruments listed under the given market.

6.11. Phase ID

It defines the trading phase of a given instrument. Table 6-7 lists these IDs and their description.

Phase ID	Phase Description
SPACE	Null Phase
P	Pre-Call

T	Continuous
C	Closing Price Trading
S	Stop

Table 6-7, Phase IDs

Note that the Stop phase applies ONLY to instruments traded through Call-Auctions and signals the conclusion of the Auction's opening. Orders could not be placed while the instrument is on the Stop phase. Finally, the SPACE as a phase ID is sent when an instrument cannot enter any of the listed trading phases (most likely because it became suspended before the beginning of the given trading session/day).

6.12. Instrument Status

It defines the status of a given instrument. Table 6-8 lists these statuses and their description.

Security Status	Status Description
A	Active
H	Halt
S	Suspended
R	Resumed

Table 6-8, Instrument Statuses

Note that the Resume status is given to an instrument when the instrument's Halt period concludes and the instrument transits to a Pre-Call one.

6.13. Order Status

It defines the order's current status.Table 6-9 lists these statuses and their description.

Order status	Order Status description
N	Not Released to the order book
I	Inactive
O	Open
EP	Good till cancel, Good till date expired status

Table 6-9, Order Statuses

6.14. Order Side

It defines the order's side. Table 6-10 lists these sides and their description.

Order side	Order side description
'B'	Buy
'S'	Sell

Table 6-10, Order Sides

6.15. Order Original Price Type

It describes the order's original price type. Table 6-11 lists these types and their description.

Original Price Type	Original Price Type Description
'L'	Limit price
'M'	Market
'O'	At The Open
'C'	At The Close

Table 6-11, Order Original Price Types

6.16. Order Lifetime

It defines the order's lifetime. Table 6-12 lists these order lifetimes and their description.

Order Lifetime	Order Lifetime Description
'D'	Day
'C'	Good till cancel
'E'	Good till date

Table 6-12, Order Lifetimes

6.17. Order Special Condition

It denotes the special condition the order must fulfill prior to execution. Table 6-13 lists these special conditions and their description.

Order Special Conditions	Description
'N'	None
'F'	Fill or kill
'I'	Immediate or cancel
'S'	Stop Instrument
'D'	Stop Index
'A'	All or none
'M'	Minimum fill
'O'	Multiple of

Table 6-13, Order Special Conditions

6.18. OTC Status

It defines the status of an OTC trade report. Table 6-14 lists these statuses and their description.

OTC Status	Description
'T'	New OTC Reported
'X'	A reported OTC is cancelled
'I'	The actual OTC trade that has been reported as cancelled

Table 6-14, OTC Statuses

6.19. Venue ID (MIC)

The four letter representation of a given Exchange/Regulated or Unregulated Market defined by the ISO 10383 standard. Table 6-15 lists the MIC codes used.

MIC	Venue ID
FOUR SPACES	Generic (applies to All venues)
XATH	Athens Exchange (ATHEX) Cash Market
XCYS	Cyprus Stock Exchange (CSE)
ENAX	Alternative
XECM	Emerging Companies Market
HOTC	Hellenic Exchange OTC Market
XADE	Athens Exchange (ATHEX) Derivatives Market
BMFM	DERIVATIVES REGULATED MARKET (SIBIU)
SBMF	SPOT REGULATED MARKET (SIBIU)
BMFA	ALTERNATIVE TRADING SYSTEM FOR EQUITIES (SIBIU)

Table 6-15, Venue IDs (MICs)

6.20. Product ID

The two digit number identifying the product under which similar Financial News messages are grouped together. Although, these IDs can range from 00 up to 99 the exact list will be populated and communicated by the Exchange as new products became available.

6.21. OTC Type

It defines the OTC trade types. Table 6-16 lists these types and their description.

OTC Type	Description
D	Delivery vs Payment
F	Free of Payment

Table 6-16, OTC Types

6.22. OTC Price Type

It applies ONLY to Bonds and indicates whether the OTC Price field incorporates the bond's accrued interest (Dirty) or not (Clean). Table 6-17 lists these price types and their description.

OTC Price Type	Description
C	Clean
D	Dirty

Table 6-17, OTC Price Types

6.23. Market Model Typology (MMT)

The Market Model Typology (MMT) model is a standard on post-trade equity data recommended by FESE. More specifically, it is a standard data model for trade condition reporting based on CESR Technical Working Group recommendations and it is considered as a prerequisite for effective data consolidation. For detailed information please visit the FESE website: http://www.fese.eu/en/?inc=page&id=79.

Market Mechanism	Description
1	Central Limit Order Book
2	Quote Driven Market
3	Dark Order Book
4	Off Book

Trading Mode	Description
1	Auction Trading
2	Continuous Trading
3	At Market Close Trading
4	Out of Main Session Trading
5	Trade Reporting (On Exchange)
6	Trade Reporting (Off Exchange)
7	Trade Reporting (Systematic Internaliser)

Transaction Category	Description
P	Plain-Vanilla Trade
D	Dark Trade
B	Benchmark Trade
T	Technical Trade
G	Give-up/Give-In Trade
E	Ex/cum dividend Trade

Negotiated Transaction Indicator	Description
N	Negotiated Trade
-	No Negotiated Trade

Crossing Trade Indicator	Description
X	Crossing Trade
-	No Crossing Trade

Modification Indicator	Description
C	Trade Cancellation
A	Trade Amendment
-	New Trade

Trade Condition Indicator	Description
F	Trade with Conditions
-	No Conditions

Publication Mode	Description

-	Immediate publication
1	Non Immediate publication

7. Appendix C: Parsing Examples

7.1. Prologue

Every message packet sent to the Data Vendors consists of the structural components listed on Table 3-1. Thus, every message packet starts with a SOH character and ends with an LRC one. Because of these well-defined boundaries, it is easy to design and implement an algorithm that will successfully parse all of the aforementioned message packets.

Each one of the following four subsections includes a parsing example. Every message category, subcategory and type transmitted to the Data Vendors should be parsed accordingly.

7.1.1. Parsing a Category O Message

Let the message packet to be the following:

□ **OSXATH00001001028027 30GRS003013000MTA** □□

This is a **Security State** message and its parsing is displayed on Table 7-1.

Data String	Field	Meaning
□	SOH	The ASCII code 1
<two spaces>	Vendor ID	The message is indented for all Data Vendors
O	Message Category	It is a Security State category message
S	Message Subcategory	It is a Stock
XATH	Venue ID (MIC)	It is an ATHEX security
0000100	Message Seq. Number	It is the one hundredth packet sent (right justified with zeros).
102802730	Message Time Stamp	The time it was sent (10:28:02:730)
GRS003013000	ISIN Code	The message involves the stock 'ETE'
M	Market ID	The security is listed under the Big Cap. Market
T	Phase ID	The security is on continuous trading
A	Security Status	The security is Active
<one space>	Halt/Suspend Reason	Default value since the security is neither halted nor suspended
□	ETX	The ASCII code 3
□ (ANSI 25)	LRC	The calculated LRC value

Table 7-1, Parsing a category O message