Release Notes

14 November 2019

Borsa Italiana Italiana

Borsa Italiana - IDEM

SOLA Trading System - Version 14

Release Notes

14 November 2019

Version 1.2

London
Stock Exchange Group

1.0   Document history

This document has been through the following iterations:

Version	Date	Section	Description
1.0	September 2019		First issue of this document published via Borsa Italiana's website and distributed to Borsa Italiana's customers.
1.1	17 October 2019	2.0	Second issue, with reviewed dates for CDR and go-live date.
1.2	14 November 2019	6.3	Corrected typo in the reference to the default value of Tag 1031.

2.0   Purpose

This document provides Borsa Italiana's customers with a high-level functional description of the changes introduced in Version 14 of the SOLA® Trading System, as well as guidelines for the technical impacts of these business enhancements. Full details of the changes to the SOLA® protocols are described in the specification documents reported in paragraph 4 (SAIL, FIX 4.2 and HSVF technical specifications). A summary of these changes is reported in paragraphs 7, 8 and 9 of these Release Notes. In case of any discrepancy between this document and the SAIL, FIX and HSVF technical specifications, technical specifications shall prevail.

The release of Version 14 of the SOLA® Trading System in the CDS environment was completed on 30 September 2019. Customer Dress Rehearsals are planned on 18 and 25 January 2020, with a target go-live date on 3 February 2020.

3.0   Readership

This document is particularly relevant to technology teams within IDEM's member firms, as it describes the changes to the technical interfaces in use to connect to the IDEM market.

4.0   Document series

This document is part of a series of documents which provide technical specifications for the SOLA® Trading System. This series of documents includes:

- IDEM - Guide to the Trading System
- SOLA Connectivity Guide
- SAIL Protocol: SAIL Specification
- FIX Protocol: FIX 4.2 Specification

- HSVF Market Data
- IDEM - Guide to PTV functionality

The latest version of these documents can be found at the following links, where guides to the conformance test for this new version of the SOLA® Trading System are also available:

- Italian Version:

    www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazioneidem/migrazioneidem.htm

- English Version:

    www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazioneidem/migrazioneidem.en.htm

5.0 Enquiries

Please contact Client Technology Services Italy if you have any functional questions about the services outlined in this document. Client Technology Services Italy can be contacted at:

Service-Desk

- Toll Free: 0080026772000
- From Mobile: +390245411399
- Email: service-desk@borsaitaliana.it

Market-Access

- Telephone: +39 0272426 668
- Email: market-access@borsaitaliana.it

Technical Account management

- Telephone: +39 02 72426 512
- Email: clients-services@borsaitaliana.it

6.0 New functionalities supported in Version 14 of the SOLA® Trading System

Version 14 of the SOLA® Trading System will support the following main functional enhancements:

- multicast version of the native market data protocol ("HSVF multicast");
- enhancements to the execution rules for bilateral transactions at sizes below MiFIR / MiFID 2 pre-trade "large in scale" threshold (subject to regulatory approval);
- introduction of "execution source code" in native and FIX trading protocols (tag 1031);
- dissemination of trading venue transaction identification code (TVTIC) and "aggressive/passive" indicator in SAIL and FIX trading protocols.

A description of the key features of these enhancements, reason for change and relevant protocol changes are described in the following paragraphs.

6.1 HSVF multicast

Currently, the HSVF service is provided via TCP protocol only. Version 14 of the SOLA® Trading System will introduce a new HSVF service, technically disseminated using a multicast (UDP) protocol in order to improve performances of the market data feed.

Market participants are reminded that:

- the HSVF service offered via TCP protocol will <u>NOT</u> be decommissioned. Customers not interested in the UDP service are not supposed to implement any change to their existing setup;
- the two versions (UDP and TCP) of the HSVF service will disseminate the same data content (all messages / fields);
- there will be no impact on existing GTP services in place for the IDEM market (GTP and GTP Lite services).

The new service will have two different UDP feeds (A and B feed) in the PDC instance, for resiliency purposes. The "replay and recovery" service (implemented using the existing HSVF TCP feed) will give customers the possibility to retrieve any missed message.

In case of disaster recovery into the Secondary Data Center, the HSVF service will be available via TCP protocol only.

For further information, please contact Client Technology Services.

6.2 Enhancements to the execution rules for bilateral transactions at sizes below MiFIR / MiFID 2 pre-trade "large in scale" threshold (subject to regulatory approval)

The three changes described below will be introduced in relation to bilateral, negotiated transactions at sizes below the MiFIR / MiFID 2 pre-trade "large-in-scale" threshold. Market Participants are reminded that negotiated transactions <u>at sizes below the MiFIR / MiFID 2 "large-in-scale" threshold</u> (here following, the "Low-sized NTs") are only possible on the IDEM market:

- for equity derivatives, when part of a "package transaction"[1];
- for non-liquid series of commodity derivatives.

Subject to the required regulatory approval, the price of a Low-Sized NT:

- will NOT be subject to Y and Z validations[2.] For this reason, a circuit breaker will never be triggered by a Low-Sized NT;
- will NOT update the last trading price for the instrument. For this reason, the price of a Low-Sized NT will NOT:
  - contribute to end-of-day price statistics such as last trade, minimum and maximum price for the day etc.;
  - trigger Stop Orders;
  - influence the potential triggering of future circuit breakers[3];
- where such transaction is permitted by MiFIR / MiFID 2 rules, its price will not be anymore constrained within the available best bid-offer spread available in the order book (extremes included, here following, the "BBO"). A new, configurable deviation percentage around the BBO will be introduced in order to validate the price of:
  - orders to execute Low-Sized NTs, at order entry;
  - Low-Sized NTs, at execution[4].

Following this change, the maximum price percentage deviations for NTs in place on the IDEM market will be defined according to the following table. This will be included in the "Guide to the Parameters" of the regulated markets organised and managed by Borsa Italiana as soon as the required regulatory approvals have been obtained. For this reason, <u>the go-live date for this change may be later that the technical go-live Version 14 of the SOLA® trading system, and will be separately communicated.</u>

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[1] All equity derivatives are in fact classified as liquid instruments under MiFIR / MiFID 2.
[2] For the "Y" validation rule, please refer to paragraph 7.1(c.2) of the IDEM "Guide to the Trading System" ("Trade Price vs. Static Control Price" validation). For the "Z" validation rule, please refer to paragraph 7.1(c.3) of the IDEM "Guide to the Trading System" ("Trade Price vs. Last Trade Price" validation).
[3] The "Last Trade Price" parameter is used in the context of the "Z validation" as the baseline to determine the potential triggering of a future circuit breaker.
[4] As per current rules, in case no BBO is available, price controls will be performed against:
  - the last trade price +/- a configurable percentage, if a last trade price is available; otherwise
  - the reference price for the day +/- a configurable percentage.

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C – Deviation limits *[omissis]* for negotiated transactions

1. For negotiated transactions pursuant to art. 5.3.5, para 1, letter a) of the Rules, the price should fall within the following deviation percentages in respect to the best prices of the trading book:

	Permitted deviation percentage in respect to the best prices of the order book (BBO)		
	For trades with a size: i) above the minimum size for negotiated transactions – LIS threshold (1) and ii) below the threshold "outside BBO" (2)	For trades with a size above the threshold "outside BBO" (2)	For trades with a size below the minimum size for negotiated transactions – LIS threshold (1), that are executed as part of a package transaction
FTSE MIB futures and mini-futures	0%	1%	1%
FTSE Italia PIR Mid-cap TR index futures	0%	5%	5%
FTSE MIB dividend futures	0%	2%	2%
FTSE MIB options	0%	20%	20%
Stock futures and options	0%	10%	0%
Dividend futures and commodity derivatives	No price limits		

In absence of prices on the trading book, the price should fall within the following deviation percentages in respect to the dynamic price:

	Permitted deviation percentage in respect to the dynamic price - For trades with any size
FTSE MIB futures and mini-futures	1%
FTSE Italia PIR Mid-cap TR index futures	5%
FTSE MIB dividend futures	2%
FTSE MIB options	20%
Stock futures and options	10%
Dividend futures and commodity derivatives	No price limits

(1) The LIS threshold represents the number of lots of every contract, which qualifies the trade as large in scale pursuant to Regulation EU 2017/583. Said threshold is individuated by Borsa Italiana in regard to every contract, communicated via a Notice and published on Borsa Italiana's website[5].

(2) The outside BBO threshold is the highest threshold individuated by Borsa Italiana for every underlying in order to apply a different deviation percentage. Said threshold is individuated by Borsa Italiana in regard to every underlying, communicated via a Notice and published on Borsa Italiana's website[4].

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[5] Italian version: www.borsaitaliana.it/derivati/derivati/derivati.htm, section "Area Tecnica", "Parametri microstruttura"; English version: www.borsaitaliana.it/derivati/derivati/derivati.en.htm, section "Technical Area", "Trading Parameters").

6.3 <u>"Execution source code" in trading protocols</u>

Version 14 of the SOLA$^®$ Trading System will introduce support to the Futures Industry Association's ("FIA") simplified "Execution Source Code" schema. The Execution Source Code (also known as the "Rate Identifier") is intended to classify the method of execution used for ETD, so that executing and clearing brokers can readily identify the appropriate brokerage rate to be applied to an executed transaction. As reported by the FIA in its Guidelines, "*ensuring that brokerage is correctly calculated, reconciled, accrued and paid is a major challenge facing the exchange traded derivatives industry. Industry adoption of this initiative has previously faltered due to uncertainty regarding how the set of values should be used, leading to a variety of bespoke solutions being implemented by firms, and a focus on post-trade reconciliation. Population of the Execution Source Code at the point of order origination has been identified as a key initiative in meeting this challenge*".

The Execution Source Code is a 1-character field, with the allowed values reported in the table below. It will be added to order entry, order modification, bulk quote data and related execution notice / execution report messages, in both SAIL native and FIX protocols. In the FIX protocol, the Execution Source Code will be identified by Tag 1031.

The Execution Source Code will also be passed to IDEM's central counterparty (CC&G) so that it will also be available to clearing firms through CC&G's clearing systems.

Population of this field will not be mandatory. In case this field is left blank at order entry, it will be defaulted to "W" ~~"D"~~ (desk). Orders with an invalid Execution Source Code will be rejected.

For full guidelines to populate this new field, please refer to FIA's Guidelines for the simplified FIA Execution Source Code Schema:

- Guidelines for the simplified FIA Execution Source Code Schema (link);
- Guidelines for the simplified FIA Execution Source Code Schema – Summary Version (link).

According to FIA's simplified Execution Source Code schema, the following values will be supported:

Value	Description	High / Low touch	Mandatory
W (default value)	Desk	High	Yes
Y	Electronic	Low	Yes
C	Vendor-provided Platform billed by Executing Broker	Low	Optional for complex model
G	Sponsored Access via Exchange API or FIX provided by Executing Broker	Low	Optional for complex model
H	Premium Algorithmic Trading Provider billed by Executing Broker	Low	Optional for complex model
D	Other, including Other-provided Screen	Low	Optional, used with discretion

6.4 Other interface changes

The following improvements will also be introduced in Version 14 of the SOLA® Trading System:

a) dissemination of "aggressive/passive indicator" in SAIL execution notices (field "liquidity status") and FIX execution reports (field "aggressor indicator"): already available in SAIL Drop Copy execution report messages (NT message), this field will indicate whether a trade derives from the execution of a passive or aggressive order. It can be used by market participants to analyse their own execution flows, as well as in the context of their regulatory reporting obligations (as an example, please refer to "market quality reports" from CDR 2017/576[6] and, more specifically, to article 3 comma (1)(e)).

b) dissemination of a unique "trading venue transaction identification code" (TVTIC) in trading protocols: a new transaction identification code, that is unique for the whole trading day and across all instruments traded on the IDEM market, will be disseminated in native execution reports and FIX execution notices. The dissemination of this new trade identifier in trading protocols aims to facilitate market participants in complying with their MiFIR / MiFID 2 transaction reporting obligations, as it the TVTIC will be now provided directly by the trading system in a format that is immediately compatible with ESMA's transaction reporting system[7]. Other existing trade identifiers will remain unchanged. The TVTIC is currently made available by Borsa Italiana only via the "Reconciliation Report" service for the IDEM market. Market participants must be aware that the rules for the generation of the TVTIC will change, as described below. For full information, please refer to the TVTIC definition document available at the following link:

https://www.borsaitaliana.it/borsaitaliana/gestione-mercati/altri-servizi/serviziregolamentari.htm

Current procedure: the TVTIC is created as follows:
  o [Instrument ID + GroupID + Trade Number], converted into numeric format via Base 62->Base10 decoding;

New procedure: with SOLA 14, the TVTIC will be of 16 characters, created by concatenation of the following fields:
  o [Instrument ID] (4 chars) + [GroupID converted into numeric format via Base 62-> Base10 decoding] (4 chars) + [Trade Number] (8 chars).

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[6] Commission Delegated Regulation (EU) 2017/576 of 8 June 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to regulatory technical standards for the annual publication by investment firms of information on the identity of execution venues and on the quality of execution.
[7] ESMA requires a TVTIC composed by numeric and capital letters only.

c) enrichment of Summary messages: the HSVF market data "Option Summary" and "Futures Summary" messages will be enriched with the event that triggered the dissemination of the message, among the following:

- "Start of Day" (code "R"), when Summary Messages containing reference data for all tradable series are disseminated;

- an update in the value of the Open Interest (including dissemination of Open Interest at the end of the trading day, code "O"), when Summary Messages containing a new open interest are disseminated for all tradable series. Not relevant for the IDEM market at this stage;

- calculation of the Daily Settlement Price (code "D"), when Summary Messages containing the DSP are disseminated for all tradable series. Not relevant for the IDEM market at this stage;

- for Long Gilt futures and during the notice period only, the calculation of the Final Settlement Price (EDSP, with code "F"), when Summary Messages containing the EDSP are disseminated. Not relevant for the IDEM market at this stage;

- the cancellation of a trade (code "C"), when a Summary Message containing updated trading statistics is disseminated for the instrument involved in the trade cancellation.

d) New pricing methodologies for strategy instruments: New values will be added to the "Strategy Instrument Keys" message, in field "Strategy Pricing". As they support new strategy types for fixed income derivatives traded on CurveGlobal® Markets (Ratio Calendar Spreads and Ratio Inter Commodity Spreads), these new values are not relevant for the IDEM market.

e) Implied level "B" in Market Depth messages: Following the introduction of finer tick sizes for certain strategy instruments on CurveGlobal® Markets (compared with the tick size in place for the strategy's outright legs) SOLA® can be configured so that implied-out orders can be generated at prices that are outside the tick table of the outright leg. For this reason, a new level has been added to Market Depth messages disseminated via HSVF (level "B"). Level "B" will be populated (on the buy and/or sell side of the order book)only in case of existence of any (at least one) off-tick implied-out order[8]. At this stage and till further notice, level "B" will never be populated for the IDEM market.

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[8] For additional information, please refer to CurveGlobal® Markets' technical notice "LSEDM CurveGlobal Products SOLA 13 Functional Release" dated 10 May 2019 (https://www.lseg.com/derivatives/lsedm/technical-notices).

7.0   Interface changes: SAIL protocol

The following table provides a description of the changes to the native SOLA® Access Information Language (SAIL) protocol, that are introduced by the functional enhancements described in this Release Notes.

Field	Messages	Description of the change	Linked to
Liquidity Status	NT (Execution Notice) NL (Leg Execution Notice) NX (Execution Cancellation Notice) NY(Leg Execution Cancellation Notice)	**New field** (already present in SAIL Drop Copy) to indicate whether a trade derives from the execution of a passive or aggressive order sent by the market participant: - "M": Maker (trade from execution of a passive order) - "T": Taker (trade from execution of an aggressive order) - (blank): None	Other interface changes (par. 6.4 letter a) – Liquidity Status
TVTIC Code	NT (Execution Notice) NL (Leg Execution Notice) NX (Execution Cancellation Notice) NY(Leg Execution Cancellation Notice)	**New field** indicating the value of the TVTIC. The TVTIC is a unique trade identifier: (i) across all instruments traded on the IDEM market and (ii) for the current trading day.	Other interface changes (par. 6.4 letter b) - TVTIC
Execution source code	OE (Order Entry) + ack (KE) OM (Order Modification) + ack (KM) OX (Cross Entry), for both buyer and seller) BO (Bundle Order) + ack (KB) OB (Order Proposal) + ack (KB) BD (Bulk Quote Data) + ack (KD) NT (Execution Notice) NL (Leg Execution Notice) IV (Order in book) Also reported in order cancellation acks (KZ, NZ) and trade cancellation acks (NX, NY) See also note (1).	**New field** to indicate how the order has been managed by the execution broker: • "W" (default value) = Desk • "Y" = Electronic • "C" = Vendor-provided Platform billed by Executing Broker • "G" = Sponsored Access via Exchange API or FIX provided by Executing Broker • "H" = Premium Algorithmic Trading Provider billed by Executing Broker • "D" = Other, including Other-provided Screen	"Execution source code" in trading protocols (par. 6.3)

(1) A corresponding 1-char filler field has been added to PN, PU and PR messages.

8.0   Interface changes: FIX 4.2 protocol

The following table provides a description of the changes to the FIX protocol in use by the SOLA® Trading System, that are introduced by the functional enhancements described in this Release Notes.

Field	Messages	Description of the change	Linked to
[Tag 1057] Aggressor Indicator	8 (Execution Report)	**New field** (already present in SAIL Drop Copy) to indicate whether a trade derives from the execution of a passive or aggressive order sent by the market participant: - "N": Maker (trade from execution of a passive order) - "Y": Taker (trade from execution of an aggressive order) - (blank): None	Other interface changes (par. 6.4 letter a) – Liquidity Status
[Tag 1907] Number Regulatory TradeIDs	8 (Execution Report)	**New field** Indicating the number of regulatory IDs in the repeating group. It will be =1 for IDEM.	Other interface changes (par. 6.4 letter b) - TVTIC
New repeating group with Tags 1903 and 1906			
[Tag 1903] Regulatory TradeID	8 (Execution Report)	**New field** indicating the value of the TVTIC. The TVTIC is a unique trade identifier: (i) across all instruments traded on the IDEM market and (ii) for the current trading day.	Other interface changes (par. 6.4 letter b) - TVTIC
[Tag 1906] Regulatory TradeIDType	8 (Execution Report)	**New field** specifying the type of trade identifier provided in the field RegulatoryTradeID (tag 1903). It will always be equal to 5 = "Trading Venue Transaction Identification Code (TVTIC)" for IDEM.	Other interface changes (par. 6.4 letter b) - TVTIC
[Tag 1031] Execution source code	D (New order – Single) AE (Trade Capture Report) + ack (AR) G (Order Cancel/Replace Request) s (New Cross Order) 8 (Execution Report)	**New field** to indicate how the order has been managed by the execution broker: - "W" (default value) = Desk - "Y" = Electronic - "C" = Vendor-provided Platform billed by Executing Broker - "G" = Sponsored Access via Exchange API or FIX provided by Executing Broker - "H" = Premium Algorithmic Trading Provider billed by Executing Broker - "D" = Other, including Other-provided screen	"Execution source code" in trading protocols (par. 6.3)

9.0 Interface changes: HSVF protocol

On top of the new multicast channel described in paragraph 6.1, the following table provides a description of the changes to the market data (HSVF) protocol, introduced by the functional enhancements described in this Release Notes.

Field	Messages	Description of the change	Linked to
Event Type	N (Options Summary Message) NF (Future Summary Message)	Formerly a filler field, it will be valued to describe the event type that triggered the dissemination of the Summary message. Please note that values "D", "F" and "O" are not relevant for the IDEM market at this stage: - "R" (**new value**): "Reference Data (SOD)" – The dissemination of the Summary message was triggered by the availability of the reference data at start of day - "C" (**new value**): "Trade cancellation" – The dissemination of the Summary message was triggered by the cancellation of a trade - "D" (**new value**): "Daily Settlement Price" – The dissemination of the Summary message was triggered by the calculation of the Daily Settlement Price - "F" (**new value**): "Final Settlement Price" – The dissemination of the Summary message was triggered by the calculation of the Final Settlement Price (for Long Gilt only) - "O" (**new value**): "Open Interest update" – The dissemination of the Summary message was triggered by the availability of a new value for the open interest	Other interface changes (par. 6.4 letter c)
Strategy Pricing	JS (Strategy Instrument Keys)	**New values** to indicate the pricing methodology applied to "ratio inter-commodity spread" and "ratio calendar spread" strategies on CurveGlobal® Markets (not relevant for the IDEM market): - "L" (existing value): "Same as legs" – The strategy is priced with the same methodology in use for its legs - "N" (existing value): "Notional" – The strategy is priced in notional terms (deprecated) - "A" (existing value): "Average Difference Change" – The strategy is priced using the Average Difference Change methodology (Pack strategies, relevant for CurveGlobal®	Other interface changes (par. 6.4 letter d)

		Markets only) - "R" (**new value**): "Ratio Inter Commodity Spread" – The strategy is priced using the Ratio Inter Commodity Spread methodology (relevant for CurveGlobal® Markets only) - "B" (**new value**): "Ratio Calendar Spread" – The strategy is priced using the Ratio Calendar Spread methodology (relevant for CurveGlobal® Markets only)	
Level of Market Depth	H (Options Market Depth) HF (Future Market Depth) HS (Strategy Market Depth)	**New value** to indicate a new implied level: - "1" (existing value): Level 1 book price and aggregated quantity; - "2" (existing value): Level 2 book price and aggregated quantity; - "3" (existing value): Level 3 book price and aggregated quantity; - "4" (existing value): Level 4 book price and aggregated quantity; - "5" (existing value): Level 5 book price and aggregated quantity; - "A" (existing value): Implied price – The whole implied quantity disseminated is available for execution at the reported "at-tick" price; - "B" (**new value**): Implied finer-tick price – At least 1 lot of the disseminated quantity is available at an improved "finer-tick" price. Relevant for CurveGlobal® Markets only.	Other interface changes (par. 6.4 letter e)