# Alternative Data Service
# J-GATE Order/Trade Data
# Specification

Version 1.0

September 2021

JPX Market Innovation and Research, Inc.

# Revision history to version 1.0

| # | Date | Chapter | Change description | Remark |
|---|---|---|---|---|
| 1 | 2021/9/21 | - | Initial version. | - |
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# 1 About This Specification

## 1.1 Introduction

This is a specification document for “J-GATE Order/Trade Data”, one of datasets of the Alternative Data Service (“the Service”). It mainly describes information necessary for users of the Service to handle the dataset.

It is prohibited to redistribute this document.

# 2 Service Details

## 2.1 Data Overview

J-GATE Order/Trade Data is a set of CSV files containing each transaction processed by Matching Engine, printed in a chronological order.

It includes basic information of each order and trade such as volume, price, and series, as well as protocol (OUCH or OMNetAPI) used to send the request transaction, order type (GFD, GTC, IOC), and other information.

Examples of data not disseminated through existing ITCH Feed include:

- IOC orders: FaK (Fill and Kill) and FoK (Fill or Kill) orders that are immediately canceled.
- Trigger on session orders: Trigger on session orders before activated.
- Error orders – Orders that are handled as errors on Matching Engine, such as orders outside the price limit.

* The data does not contain J-NET Order/Trade Data.

* The data does not contain any information that can identify the trader.

* The data does not guarantee the integrity and consistency with any other data feed from J-GATE (ITCH market data, OMNetAPI broadcast, etc.).

# 3 Order/Trade File

## 3.1 File Specification

| File name | Format | Character code | Line feed code | Delimiter | Header |
|---|---|---|---|---|---|
| OrderTradeInfo_OSE_yyyymmdd.csv | CSV | UTF-8- | LF | , (comma) | Present |
| OrderTradeInfo_TOCOM_yyyymmdd.csv | CSV | UTF-8- | LF | , (comma) | Present |

One file records data from system startup at 6:00 a.m. of the day to night session close of the following day, per OSE/TOCOM.
The file for OSE trading data is separate from one for TOCOM. (Only OSE file is available for data from July 1, 2019 to September 16, 2021.)
One line in the CSV file represents one transaction event processed by Matching Engine.

## 3.2 List of Columns

| # | Item name | Header name | Example value | Description |
|---|---|---|---|---|
| 1 | Date | Date | 20190301 | Date of the event. |
| 2 | Time | Time | 27:21:05.215690342 | Time of the event. |
| 3 | Security | Security | PUT_NK225_190412_19875 | Security subject to the event. |
| 4 | Transaction type | TransactionType | AMEND | Transaction type of the event. Possible values are:<br>• ENTER: New order<br>• AMEND: Amend order<br>• DELET: Cancel order<br>• TRADE: Trade |
| 5 | Price | Price | 220 | Price of the order/trade.<br>In AMEND event, price after the amend is set.<br>For market order, 0 is set. |

 

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| 6 | Volume | Volume | 40 | Volume of the order/trade.<br>In AMEND event, volume after the amend is set. |
| 7 | Value | Value | 8800000 | Value of the order/trade.<br>It is equal to volume*price*trading unit. |
| 8 | Bid or Ask | Bid/Ask | Ask | Bid or Ask or the order.<br>In TRADE event, ”Trd” is set. |
| 9 | Order attribute flag | Flag | NIG | Flag to indicate the attribute of the order/trade.<br>It is a list of multiple flag codes separated by space.<br>For details, see “3.2.1 List of Values in Flag Column”. |
| 10 | Order ID (Ask) | AskOrderID | 623E6E5200F04869 | Order ID expressed in hexadecimal.<br>In AMEND and DELET, the same Order ID as assigned to ENTER is set.<br>If the order results in an error, ”Error” is set. |
| 11 | Order ID (Bid) | BidOrderID | (blank) | Same as above. |
| 12 | New order entry date (Ask) | AskOriginalEntryDate | 20190301 | Date when the order was newly entered.<br>It is the date when ENTER event occurred. |
| 13 | New order entry date (Bid) | BidOriginalEntryDate | (blank) | Same as above. |
| 14 | New order entry time (Ask) | AskOriginalEntryTime | 27:21:03.047182375 | Time when the order was newly entered.<br>It is the time when ENTER event occurred. |
| 15 | New order entry time (Bid) | BidOriginalEntryTime | (blank) | Same as above. |
| 16 | Order validity (Ask) | AskValidityType | GFD | Validity of the order. Possible values are:<br>• Bouncing (FAK or FOK)<br>• GFD<br>• GTC<br>• GTD |
| 17 | Order validity (Bid) | BidValidityType | (blank) | Same as above. |
| 18 | Order type (Ask) | AskOrderType | Limit Order | Order type of the order. Possible values are:<br>• Limit order<br>• Market order |
| 19 | Order type (Bid) | BidOrderType | (blank) | Same as above. |
| 20 | Change reason (Ask) | AskChangeReason | Order updated by user | Reason for Matching Engine to process the event.<br>For possible values, see “3.2.2 List of Values in ChangeReason Column”.<br>For an error order, the return value to txstat is set.<br>E.g.) -420131 (The premium is outside the allowed price limits for this instrument.) |
| 21 | Change reason (Bid) | BidChangeReason | (blank) | Same as above. |
| 22 | DCB upper limit price | DCBUpperLimit | 260 | DCB upper limit price when the event occurred. |
| 23 | DCB lower limit price | DCBLowerLimit | 160 | DCB lower limit price when the event occurred. |
| 24 | DCB reference price | DCBReferencePrice | 210 | DCB reference price when the event occurred. |

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|---|---|---|---|---|
| 25 | Session state | SessionState | N_ZARABA | Session state (TSS/ISS) when the event occurred.*1<br>See J-GATE Connectivity Manual published by Osaka Exchange, Inc. for the meaning of each TSS/ISS. |
| 26 | Epoch time | UnixTime | 1551464465215690342 | Timestamp of the event expressed in Epoch time + nanoseconds.<br>The value coincides with the time in the Date column and the Time column. |
| 27 | OUCH flag | OuchFlag | 0 | Flag to indicate whether the order was entered via OUCH.<br>0=OMNetAPI, 1=OUCH |

*1: Under certain conditions, this column may not be an exact representation of the actual session state. For accurate information, refer to ITCH or other data feeds.

E.g.) In a case where a large number of transactions are generated in an extremely short time, such as below 100 microseconds, at the very moment when the session changes to DCB, and then a transaction comes in just after the session change, the column should set "DCB" for that transaction, but it may set some other value like "N_ZARABA".

### 3.2.1 List of Values in Flag Column

| Event type | Flag code | Item name | Description |
|---|---|---|---|
| Order event<br>(ENTER, AMEND, DELET) | FoK | Fill or Kill | FOK order. |
| | FaK | Fill and Kill | FAK order. |
| | OV | Reloaded order | Order carried over from the previous business day such as GTC/GTD. |
| | IA | Inactive Order | Order yet to be activated on orderbook and not subject to trading. |
| | TS | Trigger on session order | Trigger on session order. |
| | ERR | Error order | Error order. |
| | MOR | Morning | Order processed in morning session. |
| | AFT | Afternoon | Order processed in afternoon session. |
| | NIG | Night | Order processed in night session. |
| Trade event<br>(TRADE) | Bi | Buyer Initiated | Trade executed by aggressive buy order. |
| | Si | Seller Initiated | Trade executed by aggressive sell order. |

 

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| | Oi | Opening Initiated | Trade executed in opening auction. |
| | Ci | Closing Initiated | Trade executed in closing auction. |
| | MOR | Morning | Trade processed in morning session. |
| | AFT | Afternoon | Trade processed in afternoon session. |
| | NIG | Night | Trade processed in night session. |
| | COM | Combo | Trade executed on combo orderbook. |
| | CTL | Combo to Leg | Leg price generated by combo trade. |

### 3.2.2 List of Values in ChangeReason Column

| Texts to be set |
|---|
| Order cancelled by the trader |
| Order traded |
| Order inactivated when a user lost connection to the exchange (configurable) |
| Order updated by user |
| New order |
| Market order converted to a Limit order (MTL) |
| Order cancelled by system |
| Order cancelled on behalf |
| Trigger order triggered and converted to an active order |
| Reserved order refreshed |
| Order cancelled by system due to a price limit change |
| Order removed or changed by remove day or date orders flag |
| Order cancelled due to that trading is halted |
| Order inactivated due to that trading is halted |
| ReloadedStartOfDay |
| Order cancelled after opening action |
| Trigger on session order (SSO) triggered due to session change |

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|---|
| Quote Cancelled Delta MM protection |
| Quote Cancelled Abs MM protection |
| Crossing order deleted *1 |
| Order cancelled by the trader |
| Order traded |
| Order inactivated when a user lost connection to the exchange (configurable) |
| Order updated by user |
| New order |
| Market order converted to a Limit order (MTL) |
| Order cancelled by system |

*1: It means the order was cancelled due to STP (Self Trade Prevention) functionality.

## 3.3 Orderbook Example

Please see ”OrderTradeData_case_examples.xlsx” for how each orderbook case looks in the CSV files.