

File Description

- Document: High Precision Time Stamp File Description.docx
- Abstract: This documentation provides information about the availability and format of high precision time stamp data of the Vienna Stock Exchange (WBAG) in batch file format.

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Change history

Date	Files	What
2022-02-18	High Precision Time Stamp File Description.docx	Document Creation

File availability

Filename	Production Days	Approximate Time
HPT_VIENNA_YYYYMMDD.csv HPT_VIENNA_YYYYMMDD.txt HPTALL_VIENNA_YYYYMMDD_80.csv HPTALL_VIENNA_YYYYMMDD_80.txt	All trading days The file is available T+1 in CSV format	18:10 CET

Data Access

- File access requires the signing of the Market Data Agreement.
- The files are available in csv-format for download from the Vienna SFTP Server.
- For further information please send an email to mds@wienerboerse.at

Format description of HPT Executions File Service

- HPT Executions File Service: Available for all Xetra instruments
- The fields are separated by a semicolon (;)
- File names: HPT_VIENNA_YYYYMMDD.csv and HPT_VIENNA_YYYYMMDD.txt

Field N°	Description	Format
1	MarketSegmentID	Product identifier, extracted from EOBI/EMDI1 Packet Header
2	SecurityID	Unique instrument identifier, extracted from EOBI Execution Summary (ES)/EMDI DepthIncremental (DI)

Field N°	Description	Format
3	ExcecID	Matching timestamp, extracted from EOBI ES/EMDI MDEntryTime
4	ApplSeqNum	Message sequence number, extracted from EOBI Packet Header / EMDI DI MsgSeqNum
5	PartitionID	Grouping of T7 products, extracted from EOBI / EMDI Packet Header
6	CompletionIndicator	Indicates whether a unit of work fits into a single datagram, extracted from EOBI Packet Header (empty for EMDI)
7	TradeCondition	1 = Implied Trade, extracted from EOBI ES (empty for EMDI)
8	AgressorSide	1 = Triggered by the buy side, 2= triggered by the sell side, extracted from EOBI ES / EMDI DI
9	LastQty	Total quantity of this match, extracted from EOBI ES / EMDI MDEntrySize
10	LastPX	Worst price of this match, extracted from EOBI ES / EMDI MDEntryPx
11	RestingHiddenQty	Quantity of matched passive orders that is not displayed to the market, extracted from EOBI ES (empty for EMDI)
12	RestingCxlQty	Extracted from EOBI ES (empty for EMDI)
13	RequestTime	Gateway request in timestamp of aggressing order, extracted from EOBI ES / EMDI DI
14	AggressorTime	Matching Engine In timestamp of aggressing order, extracted from EOBI ES / EMDI DI
15	TransactTim	Time when market data feed handler writes packet on the wire, extracted from EOBI/EMDI Packet Header EOBICaptTime/EMDICap
16	EOBICaptTime/EMDICaptTime	Time when market data feed packet is captured by distribution layer tap (t_9d)
17	ETICaptTime	Time when aggressing order packet is captured by access layer tap (t_3a)

Format description of HPT All File Service

- HPT All File Service: Available for all Xetra instruments
- The fields are separated by a semicolon (;)
- Filename: HPTALL_VIENNA_YYYYMMDD_80.csv and HPTALL_VIENNA_YYYYMMDD_80.txt

Field N°	Description	Format
1	ApplSeqNum	Application sequence number, extracted from EOBI Packet Header
2	MsgSeqNum	Message sequence number, extracted from EOBI Message Header
3	Message	TemplateID, extracted from EOBI Message Header. See next page for details.
4	CompletionIndicator	Indicates whether a unit of work fits into a single datagram, extracted from EOBI Packet Header
5	PartitionID	Grouping of T7 products, extracted from EOBI / EMDI Packet Header
6	MarketSegmentID	Product identifier, extracted from EOBI/EMDI1 Packet Header
7	SecurityID	Unique instrument identifier, extracted from EOBI Execution Summary (ES)/EMDI DepthIncremental (DI)
8	Side	1= buy side, 2= sell side, in case of executions: triggering side
9	Price	Price, in case of executions: worst price of this match

Field N°	Description	Format
10	Qty	Quantity, in case of executions: Total quantity of this match
11	TradeCondition	1 = Implied Trade, extracted from EOBI Execution Summary
12	RestingHiddenQty	Quantity of matched passive orders that is not displayed to the market, extracted from EOBI ES (empty otherwise)
13	RestingCxlQty	Extracted from EOBI ES (empty otherwise)
14	ExecID	Matchier central timestamp, extracted from EOBI
15	TrdRegTSTimePriority	Priority time, extracted from EOBI
15	RequestTime	Gateway request in timestamp of aggressing order, extracted from EOBI ES or ETI package
17	AggressorTime	Matching Engine In timestamp of aggressing order, extracted from EOBI ES
18	TransactTim	Time when market data feed handler writes packet on the wire, extracted from EOBI Packet Header
19	EOBICaptTimeE	Time when market data feed packet is captured by distribution layer tap (t_9d)
20	ETICaptTime	Time when triggering ETI packet is captured by access layer tap (t_3a), network entry time of an order in case of an Instrument State Change message

T7 Time Stamp Reference

- Notes on time stamps: All time stamps provided are 8 byte integers (in nanoseconds after Unix epoch). The PerformanceIndicator is a 4 byte integer (in nanoseconds as well)
- The time stamps t_3 to t_9 are available via the following EMDI/EOBI fields:

t_3, t_3n:	Tag	5979	("RequestTime")	in the T7 ETI Response in the T7 EMDI Depth Incremental message, in case a trade is reported in the T7 EOBI Execution Summary message
t_3':	Tag	7764	("RequestOut")	in the T7 ETI Response (from the matching engine)
t_4':	Tag	7765	("ResponseIn")	in the T7 ETI Response (from the matching engine)
	Tag	25043	("NotificationIn")	in the T7 ETI Notification (from the matching engine)
t_4:	Tag	52	("SendingTime")	in the T7 ETI Response and Notification
t_5:	Tag	21002	("TrdRegTSTimeIn")	in the T7 ETI Response (from the matching engine)
	Tag	21002	("TrdRegTSTimeIn")	in the T7 EOBI Order Add, Order Modify, Order Modify Same Priority and Order Delete messages
	Tag	28820	("AggressorTimestamp")	in the T7 EMDI Depth Incremental message, in case a trade is reported

	Tag	28820	("AggressorTimestamp")	in the T7 EOBI Execution Summary message
t_6:	Tag	21003	("TrdRegTSTimeOut")	in the T7 ETI Response and Notification (from the matching engine)
t_7:	Tag	17	("ExecID")	in the T7 ETI Response (from the matching engine)
				in the T7 EOBI Execution Summary message
	Tag	273	("MDEntryTime")	in the T7 EMDI Depth Incremental message
	Tag	21008	("TrdRegTSTimePriority")	in the T7 EOBI Order Add and Order Modify messages
	Tag	60	("TransactTime")	in the T7 EOBI Order Modify Same Priority and Order Delete messages
t_8:	No Tag		("SendingTime")	in the T7 EMDI UDP packet header
t_9:	Tag	60	("TransactTime")	in the T7 EOBI packet header
(t_8-t_5):	No Tag		("PerformanceIndicator")	in the T7 EMDI UDP packet header of the T7 EMDI Depth Incremental stream

Definition on Time Stamps

- Notes on time stamps: All time stamps provided are 8-byte integers (in nanoseconds after Unix epoch). The performance indicator is a 4-byte integer (in nanoseconds as well)
- The time stamps t_3 to t_9 are available via the following EMDI/EOBI fields:

Time stamp	Definition
t_1,t_2.	can be taken by a Participant (e.g. via a network capture) when a request/ response is read from/written to the socket
t_4	taken by the ETI gateway when a response/ notification is written to the socket on the Participant's side of the gateway
t_3n	taken by the ETI gateway when the first bit of a request arrives on the HF gateway NIC
t_3	taken by the ETI gateway application when a request is read from the socket on the Participant's side of the gateway
t_3'	taken by the ETI gateway right before a request is sent towards the matching engine
t_4'	taken by the ETI gateway when a response/ notification is received by the ETI gateway from the matching engine
t_5, t_6	taken by the matching engine when a request/response is read/written
t_7	time at which the matching engine maintains the order book
t_8	time taken by EMDI publisher just before the first respective UDP datagram is written to the UDP socket.
t_9	time taken by EOBI publisher just before the first respective UDP datagram is written to the UDP socket.
t_10, t_11	can be taken by a participant (e.g. via a network capture) when a UDP datagram is read from the UDP socket.