

UBS MTF

Market data feed specification



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1. Version history

Version	Date	Changes and remarks
1.0	May 2018	Initial release

2. Introduction

This document describes the UBS MTF Market Data Feed (UMDF). This document is intended for software developers who would like to receive UBS MTF pre- and post-trade data.

2.1. Background

UBS MTF is implementing a second market segment, offering a periodic auction order book to participants in addition to the existing dark, continuous auction segment.

3. Functional overview

The UMDF provides auction and trade information. For order entry, see the UBS MTF Fix Rules of Engagement [1]. UMDF provides data in a series of ASCII messages. The length of each message depends of the message type. UBS MTF may add additional messages types, and extend existing messages. Users should be prepared to ignore unknown message types, and messages of longer than current length. Messages will only be extended to add additional information at the end of the message.

Messages are delivered using SOUP 2.0 to provide message sequencing, and session management, including login/logout request, heartbeats, and message redelivery. The dialect of SOUP 2.0 is the same as that of other market operators. In accordance with SOUP 2.0, messages consist solely of printable ASCII characters 32-126.

4. Connectivity

UBS MTF is vendor neutral, although there is existing connectivity with the following providers: Radianz, TNS and Fixnetix. It is also possible for members to cross-connect if they have presence in the Equinix LD4 Data Centre in Slough, or in Interxion London. Full details are available in the UBS MTF Connectivity Guide, available on our website [1].

5. Data types

timestamp	A left zero-padded string of eleven ASCII digits representing microseconds since midnight UTC. eg: 29701000000 (08:15:01 UTC)
price	A left-zero-padded string of nineteen ASCII digits, consisting of an eleven digit mantissa and eight digit fraction eg: 0000000010200000000 (102) 0000000000061900000 (0.619)
numeric	A string of ASCII digits ,0-9. zero-padded on the left
alphanumeric	A string ASCII characters A-Z,a-z,0-9. Left justified, and space padded on the right
sym	An alphanumeric UBS MTF symbol in Uniform Symbology. Space padded on the right up to six characters eg: "UBSGz "
char	A single ASCII character

6. Session-Level Messages

Session level messages are as defined in SOUP 2.0. For reference a sample SOUP login message is given below.

User name and password are as allocated by UBS MTF.

Requested Session should be either all blanks (' ') or the the current date as as 'yyyy-mm-dd'.

6.1. Login

<i>Field</i>	<i>Value</i>	<i>Offset</i>	<i>Length</i>	<i>Description</i>
Packet Type	"L"	0	1	Login Request Packet
Username	alphanumeric	1	6	As above
Password	alphanumeric	7	10	As above
Requested Session	alphanumeric	17	10	As above
Requested Sequence Number	numeric	27	10	The next sequence number the client wants to receive, or 0 to receive the most recent message
Linefeed	char	1	37	ASCII LF, hex 0x10
<i>Total length</i>			38	

Application-Level Messages

6.2. Auction messages

Auction Update

<i>Field</i>	<i>Value</i>	<i>Offset</i>	<i>Length</i>	<i>Description</i>
Timestamp	timestamp	0	11	Timestamp of message
Message type	"u"	11	1	<i>Auction update</i>
Symbol	sym	12	6	UMTF symbol
Auction type	char	18	1	"P" periodic auction
Indicative Price	price	19	19	Price at which the auction will uncross if completed
Indicative Volume	numeric	38	10	Executable volume at the indicative price, in shares
<i>Total length</i>			48	

Auction Summary

<i>Field</i>	<i>Value</i>	<i>Offset</i>	<i>Length</i>	<i>Description</i>
Timestamp	timestamp	0	11	Timestamp of message
Message type	"s"	11	1	<i>Auction Summary</i>
Symbol	sym	12	6	UMTF symbol

Auction type	char	18	1	"P" periodic auction
Price	price	19	19	Price at which the auction completed 0 if no executions occur
Volume	numeric	38	10	Total executed volume during the auction, in shares. 0 if no executions occur
<i>Total length</i>			48	

On completion of an auction, an Auction Summary message will be returned. If the volume is > 0, this will be followed by one or more *Trade* messages.

6.3. Trade Messages

Trade

Field	Value	Offset	Length	Description
Timestamp	timestamp	0	11	Timestamp of message
Message type	"t"	11	1	Trade
Symbol	sym	12	6	UMTF symbol
Price	price	18	19	Price at which the transaction executed
Volume	numeric	37	10	Total executed volume, in units (i.e. shares)
Execution ID	alphanumeric	47	12	Transaction identification code (TVTIC) e.g: "XUBS062906 " "XUMP07134223"
Trade Flags	alphanumeric	59	14	(MMT flags, see [below] for full MMT mapping)
Currency		73	3	An ISO 4217 Currency code, with the addition of GBX for instruments traded in Pence sterling. eg: EUR; CHF; GBP; GBX
Segment	alphanumeric	76	4	Segment MIC "XUBS" (dark segment), or "XUMP" (periodic auction segment)
TransactTime	Timestamp	80	11	Timestamp of transaction
Total length			91	

Trade Flags

These follow MMT 3.04 (<https://www.fixtrading.org/mmt/>) [2]. Values as current implemented by UBS MTF are as listed; however consumers should be prepared to accept any values as defined in MMT 3.04.

Offset	MMT Level	Name	Description
0	1	Market Mechanism	"3" Dark "5" Periodic Auction
1	2	Trading Mode ¹	"2" Continuous Auction "1" Undefined Auction
2	3.1	Transaction Category ²	"D" Dark trade "- " n/a
3	3.2	Negotiated Trade	"- " n/a
4	3.3	Crossing Trade	"- " n/a
5	3.4	Modification Indicator	"C" Trade cancellation

¹ UBS MTF Dark segment trades are reported as trade mode '2' (Continuous auction). Periodic auction trades are reported with Trading Mode '1' (Undefined auction).

² Periodic auction trades are flagged with TransactionCategory ' ' (n/a).

Offset	MMT Level	Name	Description
			"-" New trade
6	3.5	Benchmark/Reference Price Indicator	"S" Reference price trade "- " n/a
7	3.6	Special Dividend	"-" n/a
8	3.7	Off Book / Automated Indicator	"-" n/a
9	3.8	Price Formation/Discovery Process	"P" Plain-vanilla trade
10	3.9	Algorithmic Indicator	"H" Algorithmic trade "- " Non-algorithmic trade
11	4.1	Publication Mode/Deferral Reason	"-" n/a
12	4.2	Deferral or Enrichment Type	"-" n/a
13	5	Duplicative Indicator	"-" n/a

Trade Cancellation

Where a trade is subsequently cancelled, a second trade message will be sent, using the details of the original trade, but with the *Cancellation* flag set (MMT Level 3.4, above).

6.4. Administrative messages

Trading Status

Indicates current trading status on an instrument. A trading status message is sent whenever an instrument's trading status changes. Where an instrument is suspended before start of trading, a trading status message will be sent to this effect.

Field	Value	Offset	Length	Description
Timestamp	timestamp	0	11	Timestamp of message
Message type	"H"	11	1	<i>Trading Status</i>
Symbol	sym	12	6	UMTF symbol
Status	char	18	1	"T" trading "C" closed "S" suspended
Segment	alphanumeric	19	4	Segment MIC "XUBS" (dark segment), or "XUMP" (periodic auction segment)
Total length			23	

Security Definition

At the start of each day, UBS MTF will disseminate a series of Security Definition messages for all active instruments, including those which are suspended.

Messages may also be sent intra-day in the event that a field value is changed, or a new instrument is admitted.

Field	Value	Offset	Length	Description
Timestamp	timestamp	0	11	Timestamp of message

<i>Field</i>	<i>Value</i>	<i>Offset</i>	<i>Length</i>	<i>Description</i>
Message type	"i"	11	1	<i>Security Definition</i>
Symbol	sym	12	6	UMTF symbol
Currency	char	18	3	Currency of trading. An ISO 4217 Currency code, with the addition of GBX for instruments traded in Pence sterling. eg: EUR; CHF; GBP; GBX
ISIN	alphanumeric	21	12	ISO 6166 security identifier
Country of Listing	alphanumeric	33	2	ISO 3166-1 Alpha-2 Country Code
Reference Market	alphanumeric	35	4	ISO 10383 Market Identifier Code (MIC Code)
Minimum LIS	numeric	39	12	Minimum notional order value required to be eligible for execution under Large in Scale Waiver. Expressed in Currency of trading. Blank if instrument is ineligible for Large in Scale execution
Capping Status	char	51	1	" " Not Capped "d" Capped at discretion of UBS MTF "4" Venue-specific cap (4% limit) "8" Pan-venue cap (8% limit)
Dark supported	char	52	1	Available for trading on dark segment "Y" / "N" (Yes/ No)
Periodic Auction Supported	char	53	1	Available for trading on periodic auction segment "Y" / "N" (Yes/ No)
<i>Total length</i>			54	

7. Sample Messages

SOUP Login

#Log in to current session as user M00101, starting from sequence number 1:

LM00101d618c1c89a 000000001

#Log in to specific session as user M00101, resume from sequence number 2020:

LM00101d618c1c89a2018-05-01000002020

Security Definition

04:02:03 UTC, defining symbol VOD1, ISIN: GB00BH4HKS39, currency GBX, reference market XLON, country GB, LIS if > 570,082.50 GBP, dark capped, dark is supported, periodic auction is supported

012345678901234567890123456789012345678901234567890123

14523019777iVOD1 GBXGB00BH4HKS39GBXLON0000570082508YY

PLTm, currency: EUR, reference market XMIL, country IT, not capped, LIS if > 450,000 EUR

14523019867iPLTm EURIT0003826473ITXMIL000000450000 YY

07:00:00 UTC, VOD1 is open

25200075626HVOD1 TXUBS

25200075626HVOD1 TXUMP

07:00:00 UTC, PLTm is open

25200654556HVOD1 TXUBS

25200654558HVOD1 TXUMP

15:30:00 UTC, VOD1 is closed

55800045681HVOD1 CXUBS

55800045681HVOD1 CXUBS

Periodic auction

```
# Auction update; indicative price: 11.78, indicative volume: 21
51091933795uFURa P00000000011780000000000000021
# Auction summary; price: 11.78, volume: 21
51091979482sFURa P00000000011780000000000000021
# 11 shares executed in FURa. price: 11.78 EUR, on the Periodic Auction order book. Trade executed at 14:11:31.979491 UTC
51091979663tFURa 00000000011780000000000000021XUMP018 51-----PA---EUR 51091979491

# Auction is triggered in LVEp:
31552375326uLVEp P00000007100000000000000000011
# Expires without any resulting executions:
31552421577sLVEp P00000000000000000000000000000
```

Dark trades

```
# 1285 shares executed in ASHML. price: 37.535 GBX, under Reference Price Waiver on the dark order book. Trade is
algorithmic. Trade executed at 08:01:32.882394 UTC:
28892883205tASHML 000000037535000000000001285XUBS010 32D---S--PH---GBX 28892882394
# Trade above is cancelled (MMT Cancellation flag is set):
28892883209tASHML 000000037535000000000001285XUBS010 32D--CS--PH---GBX 28892883206
```

8. References

- [1] UBS Ltd, "Member Information," 2015. [Online]. Available: <http://ubs.com/mtf>.
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- [3] FIX Protocol Ltd, "FIX 4.2," 2001. [Online]. Available: <http://www.fixtradingcommunity.org/pg/structure/tech-specs/fix-version/42>.
- [4] FIX Trading Community, "EP206 Clock Synchronization Datatype Enhancement," 14 February 2016. [Online]. Available: <http://www.fixtradingcommunity.org/pg/extensions/extension-pack?ExtensionID=EP206>.
- [5] Fix Trading Community, "Market Model Typology," 2017. [Online]. Available: <https://www.fixtrading.org/mmt/>.

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